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ABSTRACT

This collection contains a series of papers each of which deals with a key issue in vocational teacher education today. Included in the volume are the following papers: "Introduction and Colloquium Purposes," by John Pucciano; "Recruitment and Retention of Vocational Education Teachers," by Richard L. Lynch; "Vocational-Technical Teacher Certification--Where Are We?--Where Are We Going?" by Norma J. Milanovich; "Structured Employment Experiences for Technological Updating of Vocational-Technical Teachers," by Jack McElroy; "Statewide Systems of Vocational Teacher Education To Meet the Challenges of Changing Technology," by Darrell L. Parks; "Evaluating Vocational Teacher Education Programs," by Floyd L. McKinney; and "Summary and Recommendations," by Gordon Swanson. Appendixes to the collection include a list of paper discussion leaders by topic, the colloquium program and agenda, and presenters' and project staff vitae. (MN)

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"Achieving Excellence in Vocational Teacher Education" includes the complete texts of five commissioned state-of-the-art-papers. The project was administered by staff of the Institute for Research and Development in Occupational Education, Center for Advanced Study in Education, The Graduate Center, of the City University of New York.

Project Staff

Lee Cohen -- Director and Principal Investigator

George Quarles -- Technical Advisor

Alan Robertson -- Editor, and Operations Manager

Assisted By The Techncial Advisory Group (TAG)

F. Marion Asche, Professor, Division of Vocational Teacher Education, Virginia Polytechnical Institute and University of Virginia, and, Past President, The American Vocational Education Research Association.

James A. Kadamus, Assistant Commissioner for Occupational and Adult Education, The New York State Education Department, and, Member-Board of Board of Directors, National Association of State Directors of Vocational Education and the National Vocational Education Consortium.

Barbara Kline, Director, National Academy for Vocational Education, The National Center for Research in Vocational Education, Ohio State University.

Mark Newton, President, American Vocational Education Personnel Development Association, The National Center for Research in Vocational Education, Ohio State University.

Herbert Siegel, Director, Bureau of Industrial Arts and Technology Education, Board of Education, City of New York.

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-1986-

COORDINATING COMMITTEE ON RESEARCH IN VOCATIONAL EDUCATION(CCRVE)

MEMBERSHIP LIST

Dr. Howard F. Hjelm, Chairman
Director, Division of Innovation
and Development
Department of Education
300 - 7th Street, S. W.
Reporter's Building, Room 519
Washington, D. C. 20202
732-2350

Dr. Tom White, Executive Sec.
Division of Innovation
and Development
Department of Education
300 - 7th Street, S.W.
Reporter's Building, Room 519
Washington, D.C. 20202
732-2374

Mr. Steve Baldwin
National Commission for
Employment Policy
1522 K Street, N.W., Suite 300
Washington, D.C. 20006
724-1571

Dr. Glenn C. Boerrigter, Chief
Program Improvement Systems Branch
Division of Innovation and
Development
Department of Education
300 - 7th Street, S.W.
Reporter's Building, Room 519
Washington, D.C. 20202
732-2367

Dr. Thomas G. Carroll, Acting Dir.
Division of Higher Education
and Adult Learning
Office of Research, OERI
555 New Jersey Ave., N.W., Rm.611-B
Washington, D.C. 20208
357-6239

Ms. Lynn Demeester
Fund for the Improvement of
Postsecondary Education
Department of Education
7th and D Streets, S.W.
ROB-3, Room 3100
Washington, D.C. 20202
245-8091

Ms. Gerard Fiala
Employment and Training Admin.
Department of Labor
601 D. Street, N.W. Room 8005
Washington, D.C. 20213
376-6660

Mrs. Juliette N. Lester
Division of Vocational Education
Department of Education
300 - 7th Street, S. W.
Reporter's Building, Room 612
Washington, D.C. 20202
732-2463

Dr. Jorie L. Mark
Division of Adult Education
Department of Education
300 - 7th Street, S.W.
Reporter's Building, Room 522
Washington, D.C. 20202
732-2393

Mr. Max Mueller
Office of Special Education and
Rehabilitative Services
Department of Education
Room 4628, Switzer Building
Washington, D.C. 20202
732-1068

Dr. Harvey Ollis
National Occupational Information
Coordinating Committee
2100 M. Street, N.W. Suite 156
Washington, D.C. 20037
653-5671

Dr. David Sweet, Director
Education Outcomes Division
Center for Statistics
1200 - 19th Street, N.W. Room 613
Washington, D.C. 20208
254-6070

Mr. R. Allan Walls
Assistant Director
National Council on Vocational
Education
2000 L. Street, N.W. Suite 580
Washington, D.C. 20036
634-6110

Dr. John Wirt, Director
National Assessment of Vocational
Education Outcomes (OBPE)
U.S. Department of Education
FOB-6, Room 3137
Washington, D.C. 20202
245-8281

Dr. William D. Halloran
Office of Special Education and
Rehabilitative Services
Department of Education
Room 4094, Switzer Building
Washington, D.C. 20202
732-1177

ACHIEVING EXCELLENCE IN VOCATIONAL TEACHER EDUCATION

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Division of Innovation and Development
Office of Vocational and Adult Education
United States Department of Education

PREFACE

The papers included in this publication were first presented in Washington, D.C. on May 22, 1986, at the Colloquium on Critical Issues in Vocational Teacher Education. They were developed under a contract awarded by the U.S. Department of Education to the Institute for Research and Development in Occupational Education (IRDOE) at the City University of New York.

Each paper deals with a key issue in vocational teacher education today -- teacher recruitment; teacher certification; evaluation of vocational teacher education programs; structured employment experiences; and statewide systems for vocational teacher education. Each author has collected and analyzed data, and has offered recommendations for action in each issue area.

The Coordinating Committee on Research in Vocational and Adult Education of the U.S. Department of Education sponsored the Colloquium on Critical Issues in Vocational Teacher Education, providing a forum by which authors and invited guests could discuss the issues, findings and recommendations presented in these important papers. The Office of Vocational and Adult Education is pleased to make these papers available to you, with the hope that they will be an effective resource for vocational teacher education practitioners, planners and policy-makers.

Howard F. Hjelm, Director
Division of Innovation & Development
Office of Vocational and Adult Education
May, 1986

-TABLE OF CONTENTS-

Introduction and Colloquium Purposes
Delivered by John Pucciano, Special Assistant Office of Asst. Secretary, OVAE

"Recruitment and Retention of Vocational Education Teachers"
Presented by Dr. Richard L. Lynch

"Vocational-Technical Teacher Certification -- Where Are We? -- Where Are We Going?"
Presented by Dr. Norma J. Milanovich

"Structured Employment Experiences for Technological Updating of Vocational-Technical Teachers"
Presented by Dr. Jack McElroy

"Statewide Systems of Vocational Teacher Education To Meet The Challenges of Changing Technology"
Presented by Dr. Darrell L. Parks

"Evaluating Vocational Teacher Education Programs"
Presented by Dr. Floyd L. McKinney

Summary and Recommendations
Presented by Dr. Gordon Swanson, Professor, Department of Vocational-Technical Teacher Education, University of Minnesota, St. Paul Minn.

Appendices

Appendix A -- Paper Discussion Leader by Topic

Appendix B -- Colloquium Program and Agenda

Appendix C -- Presenters' and Project Staff Vitae

Overview of Colloquium

Mr. John Pucciano
Executive Assistant
Office of the Assistant Secretary for
Vocational and Adult Education

I too would like to welcome you to Washington. I am pleased that you could join us for what we hope will be an important and thought-provoking exchange.

The 5 papers that will be presented here today were developed under a contract from the Office of Vocational and Adult Education (OVAE). This contract was developed in response to the many recent reports which have focused on the condition of American public education. As you are aware, because of these reports, American teachers and American systems of teacher education have come under fire in recent years. This focus on teachers led OVAE to support the development of papers on key issues in vocational teacher education.

Our intent in supporting this project was to gather information on key issues, but not to stop there. We wanted this project go beyond data collection, and to make recommendations for action to address those issues. Today's presenters have done that. They have collected and analyzed some very important data, and, in some instances, have gone out on a limb to offer recommendations for action to address the issues of--

-vocational teacher certification;
-recruitment;
-evaluation of teacher education programs;
-statewide systems for teacher education; and
-structured employment experiences.

This colloquium was designed to showcase these papers, and to provide an opportunity for you to discuss, among yourselves and with the authors, the issues and recommendations presented. I encourage you to use this opportunity to ask questions and to offer your comments.

Another point I'd like to make is this -- we do not want these papers to sit on the shelf. We want them to be used. We would appreciate your help in disseminating these papers to your colleagues and to your constituents. If you would like multiple copies of the papers, we will be happy to provide them. Let us know how many you will need, and we will send them to you. We anticipate that the papers will be ready for dissemination sometime this summer, by late June or July.

In closing, I'd like to thank you again for coming, and to encourage you to participate in today's proceedings. Have a good meeting.

Recruitment and Retention of Vocational Education Teachers

A Paper Presented to:

The Graduate School and University Center
The City University of New York

For:
Presentation and Publication
at the

National Colloquium in Washington, D.C.
National Coordinating Committee on Research in Vocational Education

By:
Richard L. Lynch
Virginia Polytechnic Institute & State University

May 22, 1986

INTRODUCTION

> WANTED: College graduates with academic major (master's degree preferred) in business, marketing, a health field, engineering, agriculture, home economics, or technical area. Excellent leadership and communication skills required. Challenging opportunity to serve up to 150 clients per day. This diversified job also requires typing, clerical, law enforcement, and social work skills between assignments and after hours. Adaptability helpful. Typical work week 47 hours. Work has many intrinsic rewards. Starting salary about $13,000 with a guarantee of $24,000 after 14 years. Lots of jobs available.

The conditions implied in the above classified ad somewhat accurately describe the typical secondary school vocational teaching assignment across the United States today. Apparently, there are plenty of jobs available. But, who will take a job like this? And, how long will the person remain? How can school leaders attract and retain qualified people to teach in vocational education, given conditions that resemble the above?

Attracting high quality personnel to the teaching profession is today and will continue to be a persistent problem in American public education. The problem may be exacerbated in vocational education because of negative publicity generated by or as a result of some of the recent education studies and reports which called for increased academic requirements in the secondary schools. Science and math have seemingly been singled out as the "in" subjects to teach; vocational education may have inadvertently been overlooked as desirable subject areas in which to teach.

Teacher retention, too, is and continues to be a persistent problem in public education. The problem may again be exacerbated in vocational education as teachers find their business, technical, and/or pedagogical skills much in demand by businesses and industries or appropriate to their own entrepreneurial interests. The pay, conditions of employment, and outlet for creative energy may be too attractive in nonschool environments to warrant continued employment in teaching.

This paper addresses recruitment and retention of vocational education teachers. The first section presents and analyzes available demand and supply data for elementary and secondary education in general and vocational education in particular. The second section addresses teacher recruitment. Attractive features of teaching, literature-based techniques for recruitment, and specific suggestions for attracting persons into teaching vocational education are presented.

In the third section, an attempt is made to answer the twin questions of what causes teachers to leave and how might they be retained. Finally, the paper concludes with a brief section presenting an initial attempt at applying a marketing model to the recruitment and retention of vocational education teachers. Discussion and/or suggestions relative to research and literature findings are included at the end of each of the four major sections.

SUPPLY AND DEMAND

The evaluation of the future labor market for vocational education teachers--indeed, for teachers in general--is fraught with uncertainties, in terms of demand and supply. Demand for teachers in elementary and the required subjects identified with secondary education are somewhat predictable by charting birth rates and projecting the numbers of those youngsters who will enroll in the public schools several years later. The supply of teachers is more difficult to determine. It is unknown just how many people will complete teacher education programs, how many of those will actually teach, and how many who teach will remain in public education. And, demand and supply for teachers in vocational education are especially difficult to predict. Demand data are difficult to determine because it is simply unknown as to how many students will "demand" vocational courses in the years ahead especially considering the apparent reduction of electives available to high school students caused by increased academic requirements. Vocational teacher supply data are difficult to predict, not only for the same reasons that make all teacher supply data suspect, but because several of the vocational subject areas (e.g., trade and industrial education, health education) do not rely on university teacher education programs as their major source of teachers. Nevertheless, it is necessary to determine if, in fact, there is a need to recruit vocational education teachers in the years ahead.

Available supply and demand data are limited. Varying data bases are inconsistent in their findings and conclusions. Comprehensive data of the validity and reliability needed to make completely accurate estimates of the past, present, and future levels of teacher demand and supply are not available (National Education Association /NEA/, 1983). Some subject areas in vocational education annually collect and assess teacher supply and

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demand (e.g., agriculture); some periodically assess supply and demand elements (e.g., industrial education); and some have apparently never examined teacher supply and demand factors. Hensel (1967), Gray (1979), and Weaver (1981) and Richmond have attempted to project vocational education teacher demand and supply for short periods of time. It is also well recognized in the literature that various socioeconomic considerations have and will continue to influence teacher supply and demand factors, at least at elementary and secondary levels of education. However, precise information on these factors or any formulae necessary to predict the effects of such factors are unavailable. Thus, this section contains estimates of varying validity and accuracy. As provided by the NEA, the Office of Vocational and Adult Education (OVAE) in the Department of Education, the National Center for Education Statistics (NCES), and various researchers in specific vocational subject areas, the limited data are presented here as a beginning point for future investigation and verification. The concepts and estimates involved in these questionable statistics must be considered in viewing supply-demand issues, "and an approximate estimate is arguably better than no estimate at all" (NEA, 1983, p. 6).

The data presented herein are further limited in that they only address teacher supply and demand at the elementary and secondary levels. Comparable data, unfortunately, are unavailable for postsecondary and adult levels of education.

Teacher Demand

The demand for teachers (the number needed) may be viewed from two perspectives: the number that will be employed in a given year (actual demand) and the number that would be employed in a given year to immediately raise the quality of school programs and services (quality demand) (NEA, 1983, p. 9). Comprehensive, accurate data on the demand for vocational education teachers are not available; however, an attempt is made in this section to make some quantifiable predictions for teacher demand in secondary vocational education. These predictions are based upon data projecting the number of total additional teachers needed for the secondary schools, the percentage of those considered as vocational educators, and the number needed in each of the vocational subject areas. Qualitative aspects which will surely affect vocational education teacher demand at the secondary level such as (possible) program expansions, improved pupil teacher-ratios, return to the basics movement, funding support, and so on are almost impossible to predict, but a few comments are provided about these and other trends that may affect the future demand for vocational education teachers.

Predicted Demand for Elementary and Secondary Teachers

The total annual demand for additional teachers includes those needed to respond to increased enrollments, to improve teacher-student ratios, and to replace teachers leaving the profession. In recent years, the total number of teaching positions in the nation's schools decreased annually. This projected decrease in demand for elementary teachers bottomed out in 1985; the annual demand for elementary teachers is now increasing and should do so for most years, at least through 1992. The decreasing demand for secondary teachers should bottom out in 1988 and then increase at a significant rate annually, at least through 1993 (Plisko & Stern, 1985, p. 144). The demand for additional teachers between 1986 and 1993 is expected to approach or exceed 200,000 each year. In Table 1, conservatively projected figures for 1984-1993 for total teacher demand and the estimated demand for additional teachers are presented for elementary and secondary education.

The demand figures presented in Table 1 are actually quite conservative in that they are based on the assumptions that teacher-pupil ratios will improve only slightly and that the turnover of teachers will remain at an estimated 6% (Plisko & Stern, 1985, p. 137). Other researchers predict a lowered teacher-pupil ratio in the years ahead and a turnover rate of at least 8% (Empey, 1984). Using conservative data provided by NCES, Empey predicted that as many as 749,000 additional teachers will be needed between 1986-90 if there are only modest increases in the number of teachers per 1,000 pupils and if teacher turnover rates hold steady at 6%. However, 1,336,000 teachers will be needed if present trends continue; that is, teacher-student ratios continue to increase considerably and the current teacher turnover rate of 8% is maintained.

Table 1

Estimated Demand for Additional Elementary and Secondary Teachers, 1984-1993

Year	Total estimated teacher demand	Estimated demand for additional teachers		
		Total	Elementary	Secondary
1984	2,457,000	143,000	84,000	59,000
1985	2,467,000	158,000	96,000	62,000
1986	2,483,000	165,000	109,000	56,000
1987	2,505,000	171,000	125,000	46,000
1988	2,517,000	162,000	124,000	38,000
1989	2,543,000	177,000	130,000	47,000
1990	2,580,000	188,000	136,000	52,000
1991	2,630,000	204,000	138,000	66,000
1992	2,687,000	215,000	135,000	80,000
1993	2,737,000	211,000	125,000	86,000

Source: Plisko, V.W., & Stern, J.D. (Eds.). (1985). The condition of education--1985 edition (NCES Publication No. 85-402). Washington, DC: U.S. Government Printing Office.

Predicted Demand for Vocational Teachers

One problem with predicting demand for vocational education teachers at the secondary level is the inexact or inconsistent definitions or perceptions of vocational education. For example, in 1982, 27% of all high school seniors described the high school program in which they were enrolled as "Vocational occupational preparation" (cited in Plisko, 1984, p. 104). And yet, an analysis of their transcript data, obtained from the High School and Beyond (HS&B) study, indicated that "Seventy-five percent of all 1982 graduates of public high schools had taken at least one vocational course that could be described as occupational...." (Plisko, 1984, p. 104). Further, 89% had taken some kind of vocational exploratory course work; only 5% earned no credit in vocational courses. The average high school graduate earned 4.4 units or approximately 20% of his or her total credits in vocational education (Plisko, 1984).

This latest figure cited by Plisko (1984)--the average high school graduate earned approximately 20% of his or her credits in vocational education--is probably the most meaningful in predicting vocational teacher demand. For purposes of vocational teacher demand prediction in this paper, it is therefore assumed that approximately 20% of the additional demand for secondary teachers will be in subject areas associated with vocational education. According to HS&B data, these subject areas are agriculture, business, marketing, technical, health, trades and industry, vocational home economics, industrial arts, and consumer home economics. And, according to data from the federal Office of Vocational and Adult Education (OVAE), the percentage of students enrolled in each of the vocational education program areas ranges from a low of 3% in technical education to a high of 21% in business education (see Table 2).

Table 3 has been constructed by combining the conservative estimate of additional demand for secondary teachers projected by NCES with information provided in the HS&B data on the percentage of total high school credits completed in vocational education courses by the average high school senior (20%) with the OVAE data indicating the percentage of total enrollment in vocational education by each of the nine vocational subject areas. Conservative teacher demand projections are thus provided for each vocational education subject area for each year, 1984 through 1993.

Other Factors Affecting Vocational Teacher Demand

There are obvious problems with projected demand data. Table 2 uses 1982 as a base year to project percentage demands through 1993. The percentages of enrollment in each of the vocational subject areas will probably not remain at the 1982 level. For example, enrollments in agriculture and home economics programs have been steadily declining while those in health and business education have been steadily increasing.

Labor market data indicate that tremendous numbers of employees will be needed in the years ahead in clerical and secretarial occupations, sales and marketing, service occupations, health fields, and in highly specialized technical occupations. Therefore, enrollments within vocational education may shift to reflect the labor market demand for new and replacement workers.

Table 2

Percent of Total Enrollment in Vocational Education by Program Area

Program area	Percent
Agriculture	5%
Health	6%
Marketing	6%
Consumer and homemaking	19%
Occupational home economics	3%
Business education	21%
Technical	3%
Trade and industrial	19%
Industrial arts	11%
Not elsewhere classified	7%
TOTAL	100%

Source: Office of Vocational and Adult Education (1983). Vocational education: Report by the Secretary of Education to the Congress 1982. Washington, DC: United States Department of Education.

Turnover rates are apparently higher in vocational education subject areas than in other secondary education fields. Craig (1982, p. 2) reported that the turnover rate among vocational agriculture teachers in 1982 was 12.9%. Lynch (telephone communications, 1982) found that teacher turnover in marketing education ranged from 14% to 20% in the three states with the largest enrollment in marketing (Texas, North Carolina, and Virginia). Tomlinson et al. (1981) reported a 13.6% turnover among industrial education teachers in Illinois. Therefore, considerably more vocational teachers may actually be needed than indicated in Table 3.

Also, there are many socioeconomic factors that will certainly affect enrollments in vocational education in the years ahead. The following are a few that may result in an increase or decrease in the demand for vocational education teachers:

1. Funding: Will there be an annual decrease in the amount of federal funds available to the states and localities to support programs of vocational education? If federal funds are significantly reduced, will the states continue to fund existing programs? Will the states provide funding for new and/or expanded programs to meet the occupational education needs of their constituencies?

2. Teacher-student ratios: Will ratios essentially remain the same? Or, based on recent trends, will they increase? Empey (1984) predicts that the secondary teacher-student ratio will increase from 60.2 teachers per 1,000 students in 1985 to 65.7 in 1990. NCES data, as reflected in Table 2, predicts the increase will be 60.2 to 62.7 teachers per 1,000 students.

3. "Graying" of the teacher force: The effects of retirement upon

Table 3

Estimated 10-Year Demand for Additional

Secondary Vocational Education Teachers

by Program Area, 1984-1993

	Secondary Teacher Demand	Number Vocational .20	Health .06	Ag .05	Mktg .06	Con/HEC .19	Occ/HEC .03	Bus Ed .21	Tech .03	T & I .19	IA .11	NEC .07
1984	59,000	11,800	708	590	708	2,242	354	2,478	354	2,242	1,298	826
1985	62,000	12,400	744	620	744	2,356	372	2,604	372	2,356	1,364	868
1986	56,000	11,200	672	560	672	2,128	336	2,352	336	2,128	1,232	784
1987	46,000	9,200	552	460	552	1,748	276	1,932	276	1,748	1,012	644
1988	38,000	7,600	456	380	456	1,444	228	1,596	228	1,444	836	532
1989	47,000	9,400	564	470	564	1,786	282	1,974	282	1,786	1,034	658
1990	52,000	10,400	624	520	624	1,976	312	2,184	312	1,976	1,144	728
1991	66,000	13,200	792	660	792	2,508	396	2,772	396	2,508	1,452	924
1992	80,000	16,000	960	800	960	3,040	480	3,360	480	3,040	1,760	1,120
1993	86,000	17,200	1,032	860	1,032	3,268	516	3,612	516	3,268	1,892	1,204

teacher demand are not well documented in the literature. Anecdotal evidence indicates that vocational education teachers are aging. What affect will retirements have on program retention in vocational education?

4. Return to the basics movement: Just how significant will be the effect of apparent increased requirements in basic or academic education on enrollments in vocational education at the secondary level?

5. Image: There has been considerable recent commentary in the literature and at vocational education conferences and seminars about the image of vocational education. Can its image be improved and thus effect student (and teacher) demand for vocational education? Can the apparent negative image of vocational education be improved among school, community, state, and national policy makers and thus result in increased programs, enrollment, and teacher demand within educational environments?

6. Labor market trends: Will vocational education respond to labor market data and trends in modifying existing and designing new programs for the future?

Teacher Supply

The supply of teachers may be viewed from two perspectives: the number actually available in a given year (quantity supply) and the quality of those available. In this section, the supply of vocational education teachers, using 1982-83 as a base year, is presented. The major socioeconomic factors that may affect the future supply of teachers in general are identified. Finally, additional data that may be helpful in predicting the future supply of vocational education teachers are presented.

Data Bases

According to the NEA (1983), the stock or total population of persons prepared to teach includes present and former teachers plus those who never entered teaching. Using 1981-82 as a base year, one data source reported the number of secondary teachers in vocational education and one reported the estimated number completing preparation to teach vocational subjects at the secondary level. According to these two data bases, there were 193,297 secondary vocational teachers in 1980-81 and 12,110 completing vocational subject teacher preparation programs. Using Empey's (1984) turnover rate of 8%, it can be estimated that 15,461 secondary vocational teachers did not return in 1981-82. Further, NEA follow-up data from 1980 teacher education graduates indicated that only 46.1% of all secondary graduates secured teaching positions. If the same percentage is true of vocational teacher education graduates, then only 5,582 of the 12,110 graduates actually entered teaching in 1982. Vocational education teacher supply information, using 1980-81 as a base year and NEA and OVAE reported data, are presented in Table 4.

It is recognized again that the data and assumptions underlying the supply information presented in Table 4 may be inaccurate. For example, higher turnover rates among teachers in at least three vocational subject areas have already been cited. Craig (1982, p. 2) reported that 1,468 persons were newly qualified to teach agriculture in 1981 (NEA reported 1,030) and that 52.2% of these graduates were placed in teaching. Lynch (1985, p. 12) reported 772 persons were certified to teach in marketing education in 1982 (NEA reported 320 in 1981). Metz and Crane (1980) reported 3,800 business teachers newly qualified to teach, but that only 39% were actually teaching six months later. They also reported 4,500 vocational teacher education graduates with 62% of them teaching six months later. Metz and Crane did not define "vocational education," but data reported apparently did not include the subject areas of home economics, industrial arts, nor business education.

Socioeconomic Factors Affecting Supply

Teacher supply is greatly affected by a variety of socioeconomic factors. Nearly all of the recent studies on American education have focused on the persistent problem of attracting high quality personnel to the teaching profession. The general impression that many persons pursuing careers in teaching are academically weak continues to be supported by research. Unfortunately, as well stated by Lanier (1984, p. 42), "many studies using population test scores give excessive attention to measures of central tendency and insufficient attention to the range." Figures cited by Weaver (1984, pp. 108-109) such as, "Fewer than half of teacher education graduates...had (SAT) scores as high as the average high school senior's scores..." and "The average scores of prospective teachers on the verbal and mathematics subtests of the SAT were, respectively, 32 and 48 points below the average scores of those who intended to enter other fields" tend to make great headlines. Other equally important figures, such as those cited in Lanier (1984, p. 44) "...11 percent of the highest scoring college graduates on the SAT verbal and math measures went into teacher education in

1976-79...7 percent assumed teaching positions" tend to be ignored and not reported.

Nevertheless, measures of central tendency do indicate that the lowest scoring subset of the college population seems to contain excessive numbers of prospective teachers and probably excessive numbers of prospective vocational education teachers. Sanderfur (cited in Lynch, 1983, p. 26) provided what is probably the five primary reasons for the poor quality of teacher applications:

1. The abominably low pay
2. The poor and declining status of the profession
3. The problems of classroom management
4. The reports of teacher surplus
5. The loss of women and minorities to other professions; for those persons, teaching is no longer an avenue for mobility--in fact, it may be a deterrent.

It is noted that teachers in some vocational and technical fields are not recognized in the work of Lanier, Weaver, and Sanderfur. Many trade, technical, and health teachers do not possess college degrees and therefore would not be in any college-bound data bases. These teachers were hired because of their extensive occupational experience and/or satisfactory scores on relevant tests administered through the National Occupational Competency Testing Institute (NOCTI), and/or intensive teacher preparation course work. Many vocational teachers earned degrees in other subjects (e.g., business, medicine, technical areas) and were employed without benefit of normal university teacher education. The quantitative and qualitative effects of such vocational teacher supply sources have apparently yet to be researched.

Future Supply

Based on NEA and OVAE data, socioeconomic factors, and trend analysis, the number of well qualified graduates preparing to teach in vocational education in the future appears to be rather bleak. The number graduating from all teacher education programs has declined yearly from a high of 37.2% of all bachelor's degrees awarded in 1966-67 to a low of 14.0% in 1980-81. In actual numbers, the figures declined from 219,587 in 1966-67 to 140,639 in 1980-81 (NEA, 1983, p. 21). Similarly, summary data reported by the American Council on Education shows the proportion of college freshmen planning to teach in elementary or secondary schools has decreased significantly each year beginning in 1969. In 1968, 23.5% of entering freshmen (448,365 persons) planned to teach; by 1982, the number had declined to 4.7% or 119,850 individuals.

Similar trends have been noted in at least two vocational education subject areas. Craig (1985) reported a yearly steady decline beginning in 1978 in the number of individuals qualified to teach agriculture. The 1984 figure was "...the lowest in the last seventeen years of this study" (p. 2). Lynch (1985, p. 12) reported an 8% decline in the number of persons earning certification to teach in marketing education in 1984 from the two previous years. Frantz (1984) noted that national shortages of vocational teachers appear most severe in agriculture, industrial arts, trade and industrial education, and marketing education.

Interrelationship of Teacher Demand and Supply

By using the various available data sources and making several assumptions, it can be predicted that there will be a considerable shortage of vocational education teachers, at least at the secondary level, in the years ahead. Just how severe the shortage will be is too difficult to predict. There are just too many variables affecting both teacher supply and demand to determine accurate numbers for vocational education. It is noted that the data in Table 4 show 5,582 recent graduates entering vocational teaching in 1982 while, in 1984--just two years later--11,800 additional vocational teachers (see Table 3) were needed. NCES data indicate that the new supply of all teachers (public, private, elementary, secondary) as a percent of demand for additional teachers started a downward spiral in 1985. In that year, the new supply of teachers met 92.4% of the demand for additional teachers. The percentage supply-demand figure is predicted to decline each year to a low of 63.0% in 1993 (Plisko & Stern, 1985, p. 144).

In summary, it appears that if vocational education--at least at the secondary level--is to continue as a viable education program in the years ahead, a major effort must be exerted to recruit large numbers of quality personnel into teaching vocational education. Considerable effort must also be expended on retaining those who are already teaching in vocational subjects. The remainder of this paper addresses recruitment and retention in vocational teacher education.

Table 4

Secondary Vocational Education Teacher Supply, 1981-82

Program area	Full-time teachers, 1980-81[a]	Less turnover (8%)[b]	1980-81 teachers returning in 1981-82	Teacher education graduates, 1981[c]	No of graduates entering teaching (46.1%)[d]	Total available to teach 1981-82
Agriculture	12,381	990	11,391	1,030	475	11,866
Business education	38,195	3,056	35,139	3,995	1,842	36,981
Home economics				3,090	1,424	34,543
--occupational	6,905	552	6,353			
--consumer and homemaking	29,093	2,327	26,766			
Industrial arts	20,196	1,616	18,580	2,385	1,099	19,679
Marketing/distribution	8,324	666	7,658	320	148	7,806
Trade, health, technical				1,160	535	38,650
--trade and industrial	35,943	2,875	33,068			
--health	4,195	336	3,859			
--technical	1,291	103	1,188			
Other, NEC	36,774	2,940	33,834	130	59	33,893
TOTALS	193,297	15,461	177,836	12,110	5,582	183,418

a = OAVE, 1983
b = Empey, 1984
c = NEA, 1983
d = NEA, 1983

TEACHER RECRUITMENT

In this section of the paper, factors identified in the research literature that have attracted people into teaching, including teaching vocational subjects, are presented. Techniques that have and continue to be used to attract people into teaching are briefly discussed. Finally, as a result of the literature and research review, specific suggestions are presented for attracting persons into teaching vocational education.

Factors Related to Interest in Teaching

Decisions to enter any profession, including teaching, have been found to be based on three major factors: one's personal definition of career success and status, availability of professional alternatives thought to satisfy those definitions, and the feasibility of attaining those professional alternatives (Chapman, 1984). Thus, the reasons a person considers teaching or other careers have much to do with the perceived fit between occupational factors and the individual's meaning of success along with the likelihood the chosen occupation will yield success. In a study conducted by the Survey Research Center at the University of Michigan, a representative sample of 1,533 American workers at all occupational levels were asked to rank, in importance, 25 aspects of work. The eight highest ranked were: (1) work was interesting, (2) enough help and equipment is available to get the job done, (3) enough information is available, (4) enough authority is given to get the job done, (5) good pay, (6) opportunity to develop special abilities, (7) job security, and (8) seeing the results of one's work (cited in Tomlinson, et al., p. 9). Other studies on work in America stress the importance of competent administrators (supervisors); a supportive, colleaguial work environment; recognition for work well done; and an opportunity to influence decisions related to one's work assignment. The studies reported by Chapman, Tomlinson, and others have important utility for recruiting teachers into vocational education.

In a comprehensive study conducted in the early 1970s, Lortie (cited in Empey, 1984, p. 172) identified the five most important reasons why people entered teaching as (1) the opportunity to work with people, (2) the desire for service, (3) the desire to continue with education because one "likes school," (4) compatibility of time (extended summer breaks, etc.), and (5) material benefits (money, prestige, and employment security). Empey comments that some of these "earlier" reasons for entering teaching have been eroded.

A survey of 4,349 college bound eleventh and twelfth graders in urban, suburban, and rural schools in seven states asked students to indicate their interest in teaching. Three primary factors related to interest in teaching surfaced from the 9% who indicated they were very interested and 26% who were somewhat interested: (1) knowledge and skill in the subject matter they would teach, (2) interest in the subject they would teach, and (3) desire to work with children or young adults (Kemper & Mangieri, 1985). Conversely, respondents who indicated they were not interested in teaching indicated three factors which would be very important influences on their interest in teaching: (1) "Considerably better salaries for teachers," (2) "More rapid salary increases for teachers," and (3) "Better chances for professional advancement of teachers" (p. 21).

Engel and Nall (1984) studied the reasons why individuals might be attracted to teaching in small- and medium-sized school districts--"the places where their services are so badly needed" (p. 105). Respondents included those who had recently accepted positions in agriculture and industrial arts. Proximity to spouse's job (where it applies), friendliness of administration, discipline, salary, facilities, personal growth, competence of staff, and philosophy of school were the most important reasons, in descending order of importance.

Additional Factors Related to Interest in Vocational Education Teaching

People in vocational education teaching seemed to have been attracted to teaching in much the same way as teachers in general. Thus, vocational education teachers like the practical aspects of the subjects they teach, serving youth, are interested in the subject matter they teach, enjoy school and learning, and value, where appropriate, the compatibility of the school structure with their perceived need for time (i.e., summers off and relatively frequent days off). There are a few additional reasons unique to vocational education that have been cited as also important in attracting persons into vocational teaching.

A major unique reason is the perception that vocational teachers have an option; that is, if they find teaching unsatisfactory or if their life circumstances change, they have the option to pursue a career in business or industry. This duo career option is an important feature of vocational teacher preparation that should be heavily used in recruiting efforts directed toward prospective vocational teachers.

A second unique factor may be the positive experience prospective teachers had with a vocational program in a high school or community college. Moss (1967) cited that 75% of business education majors became interested in teaching because of either having early office experience or taking business subjects in school. He also reported that college industrial education majors completed considerably more industrial arts classes in high school than did the national average. Farrington (1980) and Craig (1982 and 1985) reported that as many as 80% of beginning agriculture teachers were enrolled in agriculture education while in high school.

Closely related, a third attractive factor seems to be the envisioned work and activities associated with vocational youth organizations. This seems to be especially true for those individuals who were members of vocational clubs while enrolled in high school or at a postsecondary institution (personal communication with three executive directors of vocational associations, 1981).

Finally, the National Commission on Secondary Vocational Education (1985) has suggested several incentives, in addition to increased salaries, which should attract high-caliber individuals to vocational classrooms: scholarships, extended contracts (pay for additional months or hours of work), opportunities for updating occupational and teaching skills, time for parent and community contacts, and provision of modern materials and equipment.

Recruitment Techniques

It is interesting to note that none of the recent major reports issued on the quality of American education have discussed, in more than an anecdotal way, recruitment of teachers. Most have called for higher education standards, increased academic course requirements, improved teacher education, and more rigorous entry requirements for teachers. Some have said teachers cannot be recruited in adequate numbers unless working conditions and compensation in the public schools are changed significantly. It is certainly hoped that salaries and working conditions are vastly improved in the near future in the public schools. These two factors seem to be the major barriers to recruitment (and retention) of teachers, including those in vocational education. It is also interesting to note that apparently few university colleges of education are doing much to recruit students into teacher education. In a survey of 715 AACTE member institutions in the fall of 1985, Feldmann and Fisher (1986) found fewer than 30 percent of those reporting doing anything to recruit students. The limited recruitment activities consisted almost entirely of contacts (e.g., letters and brochures being mailed and direct visits) with high school students; almost no recruitment activities were directed toward those currently enrolled in college. It just seems logical that a major recruitment effort, both within and external to the college or university, is necessary to attract the quantity and quality of teachers needed to staff vocational courses.

The factors that have been identified as important in attracting people into teaching vocational education are a necessary prelude to any recruitment plan or activities. They should serve as the major content in any messages that are communicated to prospective teachers. In this section, the techniques that have been used successfully to communicate these messages, as reported in the research and literature, are presented.

The primary technique that has seemed to be the most effective in attracting people into teaching has been personal experience and contact with persons already in vocational education. Frantz (1984) cited high school experience and the positive influence of vocational teachers as the most important factors in influencing students to enroll in a vocational teacher preparation program. In industrial education, the most effective recruiting techniques were sending (college) faculty to high school career days and participating in on-campus senior visiting days (cited in Moss, 1967). Among the top five effective recruitment mechanisms cited by Probert et al. (1981) were visiting college and university campuses and personal contacts in industry. Heath (1981) cited the influence of the high school marketing teacher, conferences with marketing education faculty members, peer recruitment, presentation to business classes, and an open house in the marketing education classroom laboratory as major factors influencing students to investigate a marketing teacher education program. Subsequent survey reports of other vocational education majors at Virginia Tech found that a personal conference with a vocational education faculty member and information about the program from a person already in the major were the two most effective recruitment techniques. Group presentations, especially in freshmen and sophomore classes in the Colleges of Business, Agriculture, Human Resources (formerly Home Economics), and Engineering also were deemed highly effective.

Brochures and direct mail have also seemed to be effective. Nearly 60% of the "new" recruits in Heath's (1981) survey inquired about marketing teacher education as a result of receiving a letter describing the program. Moss cited brochures and direct mailings as important in recruiting high school students. In various surveys of large-city school administrators, most commented that they felt well designed, benefits-oriented brochures were effective supplementary recruiting techniques to accompany campus recruiting visits and personal interviews with teacher applicants.

A variety of other techniques, in some various combination, have been cited in the literature as effective recruitment techniques. Listed in somewhat random order, and by three targeted groups, they are as follows:

> Trades people, business persons, medical professionals; i.e., external to the university campus: classified or display newspaper ads; radio and television ads; presentations to community, business, labor, medical, and agricultural groups; direct contacts via advisory committees, cooperative training station sponsors, and/or apprenticeship programs; press releases; billboards; use of these people as part-time instructors; influence of effective role models from the public schools.
>
> Undergraduate college students; i.e., internal to the university campus: direct mail with attached fliers or brochures to selected majors; presentations in various campus classes, to student organizations, and to faculty or counseling advisory groups; use of video-, audio-, and/or slide-tapes; open houses and tours; posters with return cards; bulletin boards; displays in foyers of classroom buildings and student lounges; use of role models.

> High school and postsecondary students: visits by college faculty or recruiters to high schools and community colleges; direct mail with attached fliers or brochures; use of mailing lists supplied by testing agencies or vocational student organizations; phone contacts with students, parents, counselors, principals, and others; displays in schools; use of audio-, video-, and/or slide-tapes; posters with return cards; campus tours and open houses; displays at student conferences; use of role models (e.g., school alumni).

The conclusion is that effective recruitment must be comprehensive, systematic, and consistent. The theory and research in management and personnel clearly indicates that people-intense industries constantly recruit quality personnel through a variety of appeals and techniques. Except for personal contact and influence, no one technique ever surfaces as the one best way in which to recruit. Comprehensive activities; conducted all year long; and systematically, i.e., with clearly- defined goals and objectives and time-oriented tasks are the rule and never the exception.

Suggestions for Recruiting Vocational Education Teachers

The following is a listing of suggestions, based upon commentary in the literature, prior research, and the experiences of this author, for attracting and recruiting teachers into vocational education.

1. As discussed by nearly every author and researcher investigating issues related to teacher recruitment and retention, competitive salaries must be established for all teachers, including vocational education. The Rand Corporation (Darling-Hammond, 1984) has called for a national minimum of $20,000 per year immediately for beginning teachers with adjustments for experienced, competent teachers of up to $50,000 per year--the average

salary level for mid-managers. Raise the pay and you will attract a larger pool of teachers.

2. Scholarships and forgivable loans--similar to those offered through the National Defense and Education Act--should immediately be established to entice academically-talented high school and college students, homemakers, business persons, and others interested in a career change--to enter teaching. The federal Talented Teacher Act is a beginning but, at its present level of funding, it only includes 2,000 students per year. Colleges of education are encouraged to establish significant numbers of scholarships for current and prospective majors. In fact, 57% of those responding to Feldmann and Fisher's survey (1986) have already done so. National, state, and local vocational education associations are encouraged to appropriate some of their funds for teacher scholarships and loans and to encourage business and community groups to do likewise. Loans and scholarships should also be available to persons such as those in the trades, medical professions, or businesses who are seeking initial certification as vocational teachers but who do not plan to obtain a(n additional) college degree.

3. The benefits to teaching as gleaned through research should be used as the primary message in recruitment communications. For prospective vocational teachers, duo career options; diverse experiences in classrooms and laboratories and with community-based organizations and youth clubs; and opportunities for occupational and technical updating should be stressed. These benefits are in addition to those experienced by all teachers such as applied use of the subject(s) they have studied, desire to work with people,

and the uniqueness of teachers' contracts (time off for personal growth and other activities). Other teacher contract or unique benefits should be communicated as appropriate. Prospective teachers need to be "sold" on the fit between important occupational factors and teaching as they see it relative to their personal definition of success.

4. Teacher recruitment plans--including goals and objectives, specific activities, time on task analysis, funding, and persons responsible--should be developed by national, state, and local agencies and associations as well as colleges of education. Both external (i.e., outside the university) and internal (i.e., within the university) recruitment plans need to be developed, implemented, and evaluated. The messages, techniques, media, timing, and evaluative activities should be clearly spelled out. The plan should reflect comprehensive, consistent, and systematic activities.

5. Closely related to No. 4, various segments should be identified and appropriate messages and techniques targeted for each. An initial list should include currently-enrolled high school and postsecondary vocational students; other majors in colleges and universities (e.g., agriculture, business, home economics, undeclared, other education majors); college-bound high school students with any expressed interest in teaching; former teachers; former college education majors who chose not to teach; persons in the military who are approaching retirement; selected business persons and those in the trades; homemakers; and medical workers.

6. Identify a professional recruiter in large agencies such as vocational education departments in universities, state departments, and local school systems to plan, conduct or coordinate, and evaluate recruiting

activities. The person should be adequately rewarded for time devoted to recruitment activities. The effectiveness of the personal touch, group presentations, well developed and benefit-oriented written materials, advertisements, and the use of other professional marketing techniques is well documented in marketing and management literature.

TEACHER RETENTION

Of equal concern in the quest for academically and occupationally capable vocational teachers are the patterns of teacher attrition among those who begin their professional careers as teachers. In reviewing several studies in teacher retention, Rosenholtz and Smylie (1984) concluded that schools are unable to retain the most academically able teachers. They cited research indicating, for example, that only 37% of the brightest (i.e., top 10% on measured ability) of white females remained in teaching after six years while 63% of those ranked in the bottom 10% were still teaching. Reinforcing these findings are surveys of teachers' intentions to remain in teaching. Schlechty and Vance (1983) found that only 26% of teachers in the upper 20% of measured verbal ability intended to teach by age 30, while 57% of those with the lowest verbal ability intended to remain in teaching. They also report that one out of every three teachers leaves within the first five years.

The inability to retain teachers in vocational education, at least in some subject areas, may be more of a problem than it is for teachers generally. The higher turnover rates of teachers in some vocational areas has already been cited in this paper. Garcia (1983) found that 80% of the agricultural, distributive (marketing), and trade and industrial education teachers in Ohio had a medium to high desire for a career change. It was the younger teachers and those with a higher level of education who had the greatest desire to leave. Tomlinson et al. (1981) found that over 50% of the Illinois industrial education teachers who made a position change were 28 years of age or less. The annual follow-up surveys of agriculture teacher supply and demand consistently show that it is the younger teachers who change careers.

Lanier (1986) argues that the teaching field never has been viewed by significant numbers of those who enter it as a permanent career. Women basically remained in teaching for a few years until they married and had children; men put in their time in classrooms until they obtained additional credentials and moved into educational administration. Why do so many people leave teaching and, assuming that retaining capable teachers is a laudable goal, what conditions might cause them to remain?

Why do Teachers Leave?

Organizational theory suggests that people are motivated to remain in an occupation only so long as the rewards or incentives they are offered are as great or greater than the effort they are asked to expend. Specifically, for teachers to remain in teaching, the rewards must outweigh the frustrations. For many occupations, including teaching, it is the intrinsic rewards as opposed to monetary rewards that are often cited as reasons for remaining in the occupation. Predictably, then, it is the teachers who do not experience the intrinsic professional rewards of teaching who have the greatest probability of defection. Simply stated, the major reason people leave teaching is they didn't feel they were very successful at it. As stated by Rosenholtz and Smylie (1984, p. 152) "...people who leave teaching report feeling a low sense of efficacy about their own success with students." Specific reasons teachers give for leaving the profession are directly related to those conditions that affect their ability to make a difference in student learning: lack of opportunity for professional growth, inadequate preparation time, conflict with and lack of approval or support from principals and other administrators, failure to deal effectively with student misbehavior, and too much emphasis in the schools placed on nonacademic activities.

Salaries, of course, are another major contributing factor in teachers' decision to leave the profession. But, interestingly, low salaries are generally subordinate to other factors that relate to teachers' ability to succeed in the classroom (cited in Rosenholtz and Smylie, 1984).

Another major reason why teachers quit seems to be associated with the very conservative, administratively-oriented social structure that exists in many school systems. The research characterizes this in a number of ways. For example, creative, independent teachers may find their freedom, need for originality, and the desire to try new experiments or methods incompatible with school structure or administrative mandates (Armstrong, 1984). Darling-Hammond (1984) concludes that teachers are increasingly viewed as bureaucratic functionaries rather than as practicing functionaries. She cites the lack of input into professional decision-making and overly restrictive bureaucratic controls as contributors to attrition, especially among the more highly qualified (i.e., via test scores) members of the teaching profession. Other researchers talk about the recent efforts by many local and state administrators to teacher-proof the curriculum by over-specifying what must be taught and in what manner. Some mention the inadequate opportunity for adult interaction and the resulting lack of friends in the work environment, the feelings of isolation experienced by many teachers, and the sheer boredom experienced in the schools.

The absence of well defined career stages or a career ladder is also an important factor in teacher defection, especially among bright, aspiring young people. Sociologists observe that teaching, which provides relatively little opportunity for upward mobility, creates a career orientation to the present rather than to the future. In many teachers' perceptions, there is nothing to look forward to except more of the same. In studies of vocational education teachers (Garcia, 1980; Dillon, 1978) this lack of professional advancement or the need for greater achievement was a very major factor in the teacher's actual decision or desire to leave teaching.

The apparent negative image of teaching, so well presented in recent years in the American press, may also be a reason for teacher defection. Schwartz (1984) referred to this as the "Rodney Dangerfield syndrome" in that teachers get little respect from a negative press and public. She also mentioned the stressful working conditions, especially in urban schools, that put teachers in constant fiscal and physical jeopardy. The problem of a poor public image and resulting poor self respect may be especially severe for vocational education teachers as they continue to read national reports denigrating the value of vocational education at the secondary school level, experience actual or threatened funding cuts at the federal level, and observe that policy-makers and reformers are generally ignoring their unique needs in proposed educational reforms.

Closely related to the image factor and perhaps unique to teacher defection in vocational education is the perception--apparent or real--that vocational education is rapidly becoming the curriculum of last resort for students with totally inept academic and/or social skills. The National Commission on Secondary Vocational Education (1985, p. 8) stated "...school officials often view and use some vocational programs as a 'dumping ground' for less able students." Garcia (1980) found the "new populations" and "lower quality of students" was a major reason for vocational teachers' desire for a career change. Tomlinson et al. (1981) likewise found problems with low quality students to be a major factor in industrial educators' decisions to leave teaching.

In summary, there are four major reasons why people leave teaching: they don't feel they are being successful at it, low pay, overly-bureaucratic school structures, and the lack of career advancement opportunities. Vocational teachers, at least in some subject areas, have two additional reasons for defecting: poor image of vocational education in general and low quality students.

How can Teachers be Retained

This is the hard part. There do not seem to be easy, inexpensive, nor readily implementable solutions to stem the tide of teacher defection. For the most part, social theory, management research and literature, and the various education reports and follow-up studies and commentary all call for a radical restructuring of public education including the way in which teachers are treated, how they are trained, and the manner in which they are paid. It is important--indeed, perhaps imperative, for the survival of its programs--that vocational education help lead in bringing about necessary changes in public education. This includes, of course, necessary changes in vocational education. The following seem to be the major education reforms suggested in recent theory and research on teacher retention relative to vocational education.

1. A professional role and function must eventually be secured for all teachers. In order to provide quality service to various client groups, teachers must have duties, authority, decision-making responsibility, and autonomy associated with professionals. All systems in the school, including administrative and support staff, must be organized and coordinated to assist teachers in helping students to learn. It is the teachers, however, that must be empowered to make educational decisions on behalf of their students. Teachers will need to be thoughtful problem solvers (not technocrats). This is the major challenge!

2. Career ladders and a differentiated work force should be established in public education, including vocational education. This is the first recommendation for restructuring public education provided by the Holmes Group, among whose members are 39 Deans of Education of the nation's leading research universities. The proposal calls for three levels of competent teachers: (a) instructor who knows the subject, works under close supervision, has a BA degree in the subject being taught, and is possibly

part-time or temporary; (b) career teacher who has chosen teaching as a career, has a master's degree, is a specialist in the field, and assists instructors; and (c) career professional who will assist and supervise others, model excellent performance, work with the public and school administrators, and has advanced graduate study in education. Paraprofessionals to handle much of the routine work such as attendance, checking homework, keeping records, typing, and other clerical activities should be employed. The career ladders and differentiated work force have obvious implications for vocational education. Trades and business persons, with or without college degrees, could be employed either part- or full-time as instructors. They would work, perhaps as apprentices, with college-prepared vocational teachers who in turn are heavily involved with experienced career professionals who provide overall leadership and support to the identified vocational faculty and staff.

3. Salaries for all teachers must be improved. Merit pay systems ought to be established perhaps, at a minimum, congruent with the Holmes Group recommendation above; i.e., differentiated pay for differentiated work.

4. Both preservice and inservice education programs and activities must be structured to enhance teachers' success with students. This is a broad recommendation that encompasses intensive study and practice of the psychology of the age group being taught; special assistance in dealing with "at risk" students; opportunities to observe and interact with seasoned and effective teachers, to share materials with them, and to enlist their suggestions; encouragement and support to experiment with content, new

materials, methods, and activities; frequent opportunities to professionally and technically update; and so on. It is important that inservice programs be segmented, that is, targeted to the different needs of the different teachers, perhaps based on demographics, psychographics, or subject matter. Adults, as well as youth and children, need to learn and develop.

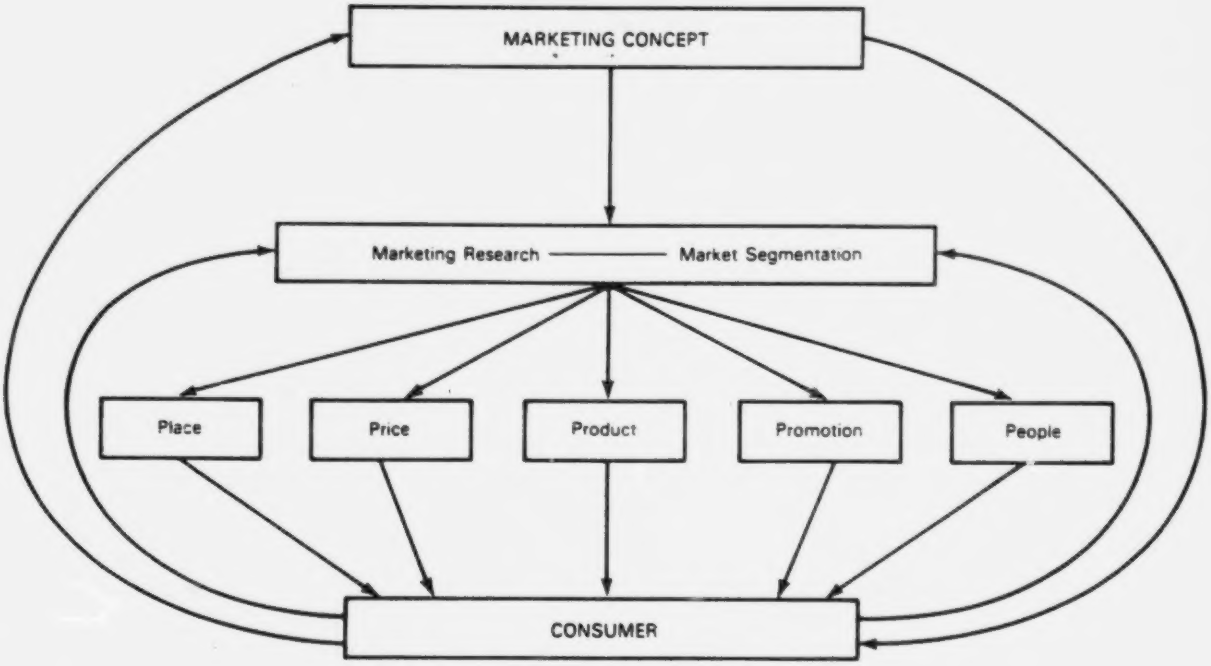
5. Intensive and frequent quality induction activities must be designed for the novice. Kane (1985) reports that the general assumption is that the new teacher will assume full responsibility from the first day on the job. "Induction...consists of being assigned a group of students, being introduced to colleagues, and being given a sketchy curriculum--should one exist--and a key to the classroom" (p. 24). Induction programs must be well designed and targeted for the needs of the inexperienced teacher and especially for those vocational education teachers who have not had formal teacher preparation. Generally, novice teachers report needing help with curriculum matters; classroom management, including motivation, discipline, and time on task; stress management; and time management. As one matures in the job, varied teaching methodologies, technology, issues in education, divergent philosophies, and student measurement surface as areas for additional study and assistance.

6. Perhaps the best way, at a macro-level, to improve retention of vocational teachers is to improve the image and credibility of vocational education. One's self concept is intimately tied to his or her occupation. In order to be reasonably adjusted and satisfied in a career, individuals must consider their work to be valued and valuable, appreciated, and compatible with how they view themselves. With the recent negative

publicity on education in general and vocational education in particular, many vocational teachers cannot be feeling particularly good about their work or themselves. Vocational educators, in collaboration with others (e.g., policy makers, educational administrators, former vocational students, business persons) must launch a proactive, substantive reform to improve its programs, services, quality of personnel, facilities and equipment, and image. Vocational education must solve its credibility and image problems. There are effective ways to change a negative image through improved products/services and increased credibility. It is hoped vocational education will lead, and not stonewall, needed reforms to improve its credibility and image with many segments of the American public.

A MARKETING MODEL FOR VOCATIONAL TEACHER RECRUITMENT AND RETENTION

A fundamental premise thoughout this paper has been that there is today and will continue to be a need for vocational education teachers. Such a need--albeit difficult to justify with specific numbers, subject areas, geographic location, etc.--warrants a coordinated, systematic, and consistent effort to recruit and retain teachers. The following is a brief and initial attempt to adapt a model, based on time-honored and effective principles and techniques from marketing theory and research, for recruiting and retaining vocational education teachers. The marketing model (Lynch, 1986, p. 2) is visually depicted below.


MARKETING CONCEPT
Marketing Research
Market Segmentation
Place
Price
Product
Promotion
People
CONSUMER

The model indicates that there are three fundamental principles of marketing that have implications for recruitment and retention of teachers: the marketing concept, marketing research, and market segmentation (sometimes referred to as target marketing or positioning). Each of these principles and their underlying definitions and assumptions undergird the five parts of marketing aggregately referred to as the marketing mix or five Ps of marketing: product, place, price, promotion, and people. It is the consumer (prospective or inservice teacher, for example) who serves as the focal point of the model. The principles, techniques associated with each of the 5 Ps of marketing, and the needs and wants of the consumer are all interrelated.

The following is a brief description and some discussion for each of the principles of marketing as depicted in the model (adapted from Lynch, 1986):

Marketing concept - a philosophy of business whereby the business aims all efforts at satisfying its customers while making a profit. For vocational teacher education, this might mean focusing primarily on meeting the needs and wants of one or more customer groups (e.g., school administrators, preservice teachers, inservice teachers, prospective teachers) by developing appropriate products and services, in an appropriate place, at a cost-effective price, well promoted, and with competent, service oriented people and--a very important point--by achieving well defined standards (i.e., "profit"). To apply the marketing concept to research and literature, vocational education program designers must:

1. Achieve agreement to this philosophy from all levels of management within the agency or institution.
2. Identify and then listen well to prospective or actual client groups.
3. Possess a remarkable people orientation.
4. Be extremely service oriented.
5. Put in place customer-friendly systems (e.g., policies, communications, techniques, procedures).
6. Control the quality and consistency of programs and services through feedback, evaluation, training, and supervision.

Marketing research - objectively collecting, analyzing, and reporting accurate, timely, and relevant data. Obviously, for vocational teacher education recruitment and retention purposes, this also means making wise use of data and conclusions from the many studies already completed. Use of good research is an essential element in the effective management of any business; so it should be with effective vocational teacher recruiting and retention programs.

Market segmentation - the act of dividing a market into distinct and meaningful groups that merit separate products, services, promotion, or other elements of the marketing mix. Market segmentation implies that differences do make the difference. It allows for more accurately defining groups with similar needs and interests and then planning appropriate recruitment efforts and retention programs to reach each group. Marketers typically group according to demographics, geographics, psychographics, and/or behavioristic characteristics. Marketers generally use four criteria for selecting market segments:

1. Is the segment measurable?
2. Is the segment large enough to warrant attention and communication?
3. Is the segment reachable?
4. Will the segment be responsive?

The philosophy of the marketing concept, the data and conclusions from research, and the segmented markets should then enable education decision-makers to plan appropriate teacher education programs and services (product), at an appropriate place, at a cost-effective price, with effective promotion, and a well trained teacher education and administrative staff to operate and manage the programs. Using the philosophy and data inherent in each of these three principles, decision-makers should be able to answer some or all of the following questions associated with each of the elements of the marketing mix. (Note: these are illustrative examples only; they are provided to stimulate further thinking and discussion.)

Product

1. What are the generic knowledges, skills, and attitudes that should be possessed by all vocational teachers?

2. What are the "technical" skills that should be possessed by vocational teachers of the various subject areas?

3. What types of programs and services should be offered to accommodate the unique needs of various segmented groups; e.g., those persons with extensive occupational backgrounds but an unearned college degree, college graduates without teacher preparation, military veterans, undergraduate college students, homemakers now wishing entry into the teacher labor force, etc.

4. What and when should vocational teacher education programs be added? Equally important, what and when should they be eliminated?

5. What's attractive about teaching in general and, more specifically, about teaching in vocational education?

6. How can image factors be controlled?

Place

1. Where should vocational teacher education programs be offered to accommodate the various segmented groups?

2. What modern, up-to-date facilities, equipment, and materials are necessary?

3. On what dates and at what times should the programs or services be offered?

4. What "channels of distribution" can be used to market vocational teacher education offerings (e.g., advisory committees, trade or business groups, youth clubs, college academic advisors, cooperative education training sponsors, parent groups, etc.).

Price

1. What financial incentives can be used to attract individuals into vocational teaching?

2. What are the most effective appeals to promote vocational teacher education as a wise investment?

3. What financial appeals (e.g., salary, benefits, occupational updating) are most appropriate to encourage vocational teacher retention?

4. What are the price "barriers" that need to be overcome and what are the best incentives to use in overcoming them relative to vocational teacher recruitment and retention?

5. How can various "career ladders" be implemented to be cost effective to the public, acceptable to most teachers, and financially attractive for those who wish to advance within vocational education?

Promotion

1. What are the most effective techniques, media, and messages to use in promoting the good news about vocational education?

2. What blend of promotional activities are appropriate to reach the various segments and communicate with them about teaching vocational subjects?

3. What personal and group selling techniques and messages are most effective?

4. How can vocational youth clubs, professional associations, and trade groups be enlisted to promote vocational teaching as a viable profession?

5. How can publicity and public relations activities be creatively organized and delivered to enhance vocational teacher recruiting and retention?

People

1. What are the generic knowledges, skills, and attitudes that should be possessed by all teacher educators whether they be university professors, itinerant teacher "trainers," master teachers, or supervisors?

2. How should teacher educators be prepared, supervised, and evaluated?

3. How can it be assured that an adequate and competent cadre of teacher educators is available at both preservice and inservice levels of instruction?

4. How can administrators and supervisors be prepared in essential management and motivational techniques to design and implement appropriate structures within educational environments to insure adequate and competent teacher and teacher education staffs?

In summary, the marketing model as introduced in this section of the paper uses three fundamental, time-honored principles of marketing intermingled with the 5 Ps of the marketing mix: product, place, price, promotion, and people. Marketing is a disciplined approach to improvement in that it considers all aspects of the problem, not just promotion or price barriers or some other part of the marketing mix. It provides the framework for effectively communicating the features and benefits of a product or service to various groups. In the past few years, many of America's major corporations have declared marketing as their "new" priority. Perhaps it is time for vocational education to do likewise.

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VOCATIONAL-TECHNICAL TEACHER CERTIFICATION--
WHERE ARE WE? AND WHERE ARE WE GOING?

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by:
Dr. Norma J. Milanovich
The University of New Mexico

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TABLE OF CONTENTS

INTRODUCTION 1

Purpose of This Paper 8

Data Collection 8

VOCATIONAL-TECHNICAL TEACHER CERTIFICATION -- THE STATE OF THE ART . . 10

Functions of State Agencies 10

Types of Certification. 13

Features of State's Vocational-Technical Teacher Certification Programs. 16

PROJECTIONS AND RECOMMENDATIONS FOR THE FUTURE 23

SUMMARY. 29

INTRODUCTION

The importance of quality vocational-technical certification programs and of continued professional development for all the vocational instructors in our country today are ideas with which few people will disagree. The reason for this overwhelming consensus becomes apparent if one only observes a few of the many changes that are occurring in our society today. It has been reported that:

1. Knowledge is doubling every six years and this will continue to accelerate (Modlin, 1986);
2. Computers and electronic devices which have dominated the workplace are now beginning to dominate the homefront as well (Naisbitt, 1985);
3. Shifts in the American workforce with the emergence of women and minorities in the employment arena have initiated new demands on the educational systems (A Guide to Implementing the Carl Perkins Vocational Education Act, 1985);
4. The United States and the world in general are clearly in the "age of communications and information processing" as compared to the manufacturing era of yesterday (Toffler, 1985);
5. New areas of interest and unconquered frontiers such as the space program, genetics, laser technology, media, and telecommunications are quickly moving to the forefront of education and training concerns (Moffet, 1985); and
6. The entrepreneurs are emerging as the "engines of the new economy" (Naisbitt, 1985).

These are just a few of the many trends and changes that affect vocational education today.

Public educational institutions are expected to provide education and training to meet the needs of our fast changing society, while simultaneously providing for "the basics". Yet, for the first time in the development of our country, businesses and industries are leading educational institutions in trends, technologies, research and also with the monetary and public support to enhance their efforts. This pronounced discrepancy between the expectations put on vocational-technical education to deliver training, and the lack of support to operate the programs, has created a critical situation and considerable pressure for vocational-technical instructors, program administrators, teacher educators, and the personnel in the State Departments of Education in all fifty states. One of the most significant ways that this pressure manifests itself is in the area of teacher/instructor* preparation and certification, since vocational-technical education is only as effective as the personnel who deliver the instruction in the various programs.

To be an effective vocational-technical instructor today, an individual must be knowledgeable and experienced in:

1. a specific skill area(s);
2. instructional planning, implementation, and evaluation;
3. classroom and laboratory management; and
4. occupational experience.

He or she must also know how to prepare students for both the jobs of today and the jobs of tomorrow which are created on a daily basis. The students and public are demanding an education which will help them more easily cope with and move into the twenty-first century. "Accountability" is the current buzzword around the nation and the cry from the public as society demands more and more from its educational institutions. This demand quickly translates into performance for the individual instructors, as the pressure for accountability filters down from the policy makers

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*The terms "teacher" and "instructor" will be used interchangeably in this paper.

(usually the State Departments of Education), through the institutions which deliver teacher training (colleges and universities), and finally to the classrooms at the local schools and institutions. To be accountable means to be responsible or answerable. Translated to the students' standpoint: The vocational-technical training they receive should provide the necessary skills for each to obtain gainful employment in our society, no matter how complex that society may be. If the students are not trained properly or do not get jobs, someone has failed. Someone must be held accountable.

Recently, one of the ways that many states have responded to the pressure for vocational-technical teacher accountability has been to re-examine their teacher certification programs on both the secondary and post-secondary levels. In some instances this has resulted in redefining standards, guidelines, and certification requirements. In others it has meant institutionalizing testing procedures, usually nationally standardized tests. In still other cases the process has involved establishing entirely new programs and procedures for certification, often in collaboration with business and industry. Finally, some states have reorganized totally, incorporating a combination of any or all of the above procedures.

Who has been involved in all these re-organizational efforts? The review of the literature reveals that personnel at all levels have been actively involved in the process. In some instances the State Departments, such as those in Arkansas, New Mexico, New York and Pennsylvania, to name a few, have been the initiators of change. Other articles such as those by Mann (1981), Boyd and Chance (1977), Brown and Flippo (1983) and Adamsky (1980), show that teacher education institutions are assisting in the leadership responsibilities of designing and implementing new programs that affect certification, especially for specific subject matter areas. A more concentrated review of the literature revealed a report on a twenty-month study entitled Standards For Excellence in Trade and Industrial Education (1985) which was supported by the Vocational Industrial Clubs of America, in Leesburg, VA. The contents of that thick document contained standards developed in this national project for:

1. trade and industrial education programs common to all secondary and post-secondary education programs;

2. trade and industrial teacher education programs; and

3. certification of laboratory, shop, and teachers of trade and industrial education.

Just prior to this study, another one entitled Standards for Industrial Arts Programs Project was begun in 1980. The leadership through funding for this endeavor was provided by the former United States Office of Education (USOE) to the Virginia Polytechnic Institute and State University (Kozak and Trapp, 1983).

On a national level, the National Center for Research in Vocational Education at The Ohio State University has also assumed leadership responsibilities for vocational-technical teacher certification and professional development. One of the more pronounced ways has been by designing and validating numerous teacher competencies, which resulted in the production of a series of performance-based instructional modules. These competencies and modules have not only been adopted by many states for use in their various teacher education programs, but they have also been integrated into some of the certification programs at the State Departments of Education around the country. Documentation and evidence to support this statement nave come from two sources: (1) the author's attendance at numerous national meetings and conferences such as the "Achieving Professional Excellence Conference" conducted in Little Rock, AK, in October of 1985; and (2) recent responses to a fifty-state telephone survey conducted in 1986, for data collection for this paper.

Some of the other organizations affecting vocational-technical certification policies and practices are the State Directors of Vocational Education, professional organizations such as the American Vocational Association (AVA), the American Association of Colleges for Teacher Education (AACTE), The American Association of Colleges and Junior Colleges (AACJC), and the specialty professional organizations within vocational education itself. Each, in its own way, has made contributions related to the concerns surrounding the vocational-technical certification programs in our nation. Evidence of the contributions comes from examining such things as the agenda items for these organizations' state, regional, and national meetings or the reports that have been sponsored by the various groups, such as Miller and Roehrich's (1977) AVA study and the 1985 AACTE issue entitled "Teacher Education Policy in the States: A 50-State Survey."

The few examples selected above to document the restructuring of the vocational-technical certification process in our country today are, in no way, meant to be interpreted as an extensive listing of "who's doing what". On the contrary, the articles written describing programs or special features of programs relating to vocational-technical teacher certification in all areas are too numerous to summarize in this paper. The intent of the summary is to merely document that:

1. there is no one central source for leadership, and

2. there are no consistent standards or procedures for the development of vocational-technical certification programs in this country today.

To further complicate this situation, no two states have the same vocational-technical certification program, as this report will later explain. Every state has designed its own standards, guidelines, policies, procedures, and teacher education programs for training for and implementation of the certification requirements.

What does this mean for vocational-technical education today? At a time when the public is calling for "accountability", does this situation hurt or harm vocational-technical education? Arguments on one side might claim that this situation is appropriate for "State's Rights" and the founding principles of our government. The individuality of the systems, they say, helps us design programs that match the needs of our educators on the local level. And the "grassroots" concept of developing unique programs gets the appropriate individuals involved. Leadership is developed and nurtured with this process, along with creativity. In some ways it is even analogous to our free enterprise system. Then there is the argument that to change the present structure is both time consuming and costly.

Opponents of these arguments might counteract by highlighting some of the problems connected with this approach, such as:

1. National Studies to evaluate the effectiveness of vocational-technical teacher certification programs are difficult, if not impossible, to complete due to the lack of consistency in the standards and programs around the country.

2. Comparisons, for the purpose of highlighting model programs, are also very difficult to accomplish, due to the lack of continuity among the states' approaches to vocational-technical certification.

3. Having fifty different programs is not the most cost effective means to handling the vocational-technical certification problem.

4. Standards for vocational-technical certification and teacher competence established in one state may not be recognized as valid or be accepted in another.

5. Reciprocity between states for vocational-technical teachers who relocate sometimes becomes a major problem, especially for the teachers. At a time when our population's mobility rate is increasing, this situation creates a wide variety of problems.

6. Basic vocational-technical certification terminology is inconsistently defined by different groups in the various geographic locations around the country.

7. Data bases containing pertinent information on vocational-technical certification policies, procedures, and practices are difficult to establish.

8. National legislation would be more easily and efficiently written and passed if there were consistency in our states' programs and practices. More uniformity would enable vocational-technical educators to build better data sources, which would support the writing of new legislation.

9. Vocational-technical certification programs are easier to support and defend on a united front, rather than on an individual basis. The phrase "united we stand, divided we fall" could apply here.

A final argument is the following:

10. Summarizing the state of the art for vocational-technical teacher certification in the United

> States today is an arduous and difficult task, mainly because of the lack of standardization among the states' programs.

This final premise is also supported by some of the most recent researchers and authors who have attempted to do so (Miller and Roehrich, 1977; Miller, 1982; Resnick and Gardner, 1979; Ryland, 1981; and Eschenmann, 1977).

The ten identified problem areas (stated above) are not unique, however, to vocational-technical teacher education, as the 1984 Phi Delta Kappa Teacher Certification report consistently documents the existence of the same or similar problems for teacher education certification programs in general.

The public is calling for educational reform and is demanding action on all fronts. If the educators do not react and make the necessary changes, the public will do it for them (Smith, 1984). It is time for action. It is time to re-examine the programs, accomplishments, efforts, and actions.

Ironically, one of the most important documents needed today is the "summary of the art of vocational-technical certification," the same paper the experts claim is an impossible task to complete. Yet this seems to be exactly what is needed to begin to appease the current surge of agitated interest in educational reform and to quiet the cries for accountability. But along with a summary that describes "what is" another component is also necessary. The second component that is needed is one which also analyzes "what is needed," so that out of that first part new directions and plans for program improvement can emerge. Plans and ideas that vocational educators can use to shape their own future (rather than having their future shaped for them) are the kinds of documents that need to be produced for the profession. Thus, the need for this paper is identified, as this research effort is an attempt to do just that.

PURPOSES OF THIS PAPER

The purposes of this paper are:

(1) to review the literature and research on vocational-technical teacher certification programs;

(2) to summarize the state of the art of vocational-technical teacher certification in the United States today; and

(3) to make projections and recommendations as to the changes and/or improvements that appear to be necessary for improving vocational-technical teacher certification programs in the future.

DATA COLLECTION

It is important to describe at this point the kind of data that was collected and utilized in the writing of this report. After an extensive library search, an ERIC search conducted by the National Center for Research in Vocational Education, the completion of a brief questionnaire by most of the State Directors of Vocational Education at the December, 1985 AVA meeting in Atlanta, GA (see Appendix A), and a review of twenty-one state documents on vocational-technical teacher certification, it was determined that the research, literature, and information gathered was inconclusive to summarize the problem area assigned to this paper. In January of 1986 then, a new telephone questionnaire instrument (see Appendix B) was designed, and vocational-technical education personnel from all fifty states were contacted directly for further information. In all cases either the State Director, Assistant Director or the individual in charge of vocational-technical certification was reached and queried personally. Their responses were recorded on separate questionnaires by the researchers who initiated the calls.

Data and information from all the sources were then analyzed and compiled to write this report. The review of the literature and the responses to selected questions on the two questionnaires aided the most in preparing the second section of this paper entitled "Vocational-Technical Teacher Certification--The State of the Art". The third section, "Projections and Recommendations For the Future," was summarized from the people questioned and also the author's own perceptions as to what is needed for the improvement of vocational-technical teacher certification on the national and state levels.

The data generated from each of the two instruments developed for this study were not tabulated separately to show state-by-state comparisons of programs and features. There are two reasons for tnis:

1. The respondents were assured up front that the purpose of gathering all this information was not for comparing one state with another. Instead, the assignment given for the national survey was to summarize the state of the art of vocational-technical teacher education for the country as a whole. By following this plan, it was decided that the respondents would be more willing to share candid comments and perceptions, especially to the open-ended questions.

2. Basically, each state's program is so different from the other state's, that even standard "yes" and "no" questions or those that required the respondents to "check the appropriate" were difficult to tally, much less organize in a standardized table or chart format. Frequently, there were always exceptions to each question asked. This situation only precluded the development of standardized comparisons for many areas that were questioned.

VOCATIONAL-TECHNICAL TEACHER CERTIFICATION--THE STATE OF THE ART

At the completion of the review of the literature and of the gathering of the data, the information was analyzed and summarized. All data were organized and described in relationship to three main categories, which are the following:

1. Functions of State Agencies;
2. Types of Certification; and
3. Features of State's Vocational-Technical Certification Programs.

Functions of State Agencies

In regard to the first category, "Functions of State Agencies", a comparison was made in this research paper between the results of Miller and Roehrich's study (1977) and the conditions that exist today. In 1976 Miller was requested by the American Vocational Association (AVA) to head a team and investigate the status and functions of state governing boards and committees for vocational education personnel certification for all fifty states. The purpose of that study was to investigate the vocational teacher certification area, so as "to assure the continued quality of vocational education offerings." (Miller and Roehrich, 1977, page 1) The results of that team's efforts were published in a report and presented to the AVA board in 1977.

The comparison of the functions of state agencies as they existed in 1977 to what is presently in existence reveals that the manageable typology Miller and Roehrich described in 1977 is still operational today. Basically, there are four structures of governing boards/agencies that oversee vocational-technical teacher certification. They are:

Type A - A full authority teacher standards and practices board. (A fully independent commission with ultimate authority, authorized by the state legislature.)

Type B - A teacher standards and practices board which is an advisory board to the State Board of Education and/or its education agency. (A special board with educators heavily represented, the final authority lies in the State Board of Education.)

Type C - The State Board of Education and/or a state education agency controls teacher certification. (State Board control or delegation to a state agency assisted by an advisory council.)

Other types - State certification agencies that do not follow one of the above categories (Miller and Roehrich, 1977, page 5).

For the purposes of this report it is not necessary to analyze the structure of these governing bodies in the states and how they impact the vocational-technical teacher certification process. What is important to acknowledge is that there are several bureaucracies, each with its own unique structure, ways of doing things, and standards. Many of these boards change their membership on a regular basis also, through appointments or elections. Another fact of comparison is that there is no consistency between the states in regard to their standards for quality programs or in the way in which the vocational-technical teacher certification programs are administered. If there are some similarities, it appears to be by coincidence rather than design.

After learning of the structures that govern the vocational education certification processes in the states, Miller and Roehrich's team then developed a questionnaire that was designed to identify the major responsibilities of each state agency in the area. Eleven questions were included in his report (Table IV) and each state's responses were recorded individually.

For the purposes of this study, five of the eleven questions were replicated and asked again of the state agency personnel. The results of the responses and the comparison between the responses given in 1977 and 1986 are recorded in Table I on the following page.

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TABLE I

COMPARISON OF MILLER AND ROEHRICH'S (1977) STUDY TO THE PRESENT, REGARDING THE SHIFT OF RESPONSIBILITIES OF THE STATE AGENCY FOR CERTIFICATION OF VOCATIONAL SECONDARY AND POST-SECONDARY PERSONNEL

SITUATION IN 1977

Responsibility	Alabama	Alaska	Arizona	Arkansas	California	Colorado	Connecticut	Delaware	Florida	Georgia	Hawaii	Idaho	Illinois	Indiana	Iowa	Kansas	Kentucky	Louisiana	Maine	Maryland	Massachusetts	Michigan	Minnesota	Mississippi	Missouri	Montana	Nebraska	Nevada	New Hampshire	New Jersey	New Mexico	New York	North Carolina	North Dakota	Ohio	Oklahoma	Oregon	Pennsylvania	Rhode Island	South Carolina	South Dakota	Tennessee	Texas	Utah	Vermont	Virginia	Washington	West Virginia	Wisconsin	Wyoming
Establish criteria for certification standards		x	x		x	x	x	x		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Establish guidelines for performance standards		x	x			x	x			x	x		x	x				x	x		x			x	x	x	x	x	x		x	x	x	x			x	x					x	x	x	x	x	x	x	x
Develop teacher preparation standards		x	x	x		x	x	x		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		x	x	x	x		x	x
Develop recertification standards		x	x	x	x	x	x	x	x	x		x		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		x	x	x	x	x		x	x	x	x	x	x	x	x	x	x	x		x	x
Determine occupational experience requirements for vocational education certification standards		x	x	x		x	x	x	x	x	x			x	x		x	x	x	x	x	x				x	x	x	x	x	x	x	x	x	x	x	x	x		x		x	x	x	x	x	x			x

PRESENT SITUATION

Responsibility	Alabama	Alaska	Arizona	Arkansas	California	Colorado	Connecticut	Delaware	Florida	Georgia	Hawaii	Idaho	Illinois	Indiana	Iowa	Kansas	Kentucky	Louisiana	Maine	Maryland	Massachusetts	Michigan	Minnesota	Mississippi	Missouri	Montana	Nebraska	Nevada	New Hampshire	New Jersey	New Mexico	New York	North Carolina	North Dakota	Ohio	Oklahoma	Oregon	Pennsylvania	Rhode Island	South Carolina	South Dakota	Tennessee	Texas	Utah	Vermont	Virginia	Washington	West Virginia	Wisconsin	Wyoming
Establish criteria for certification standards	x			x	x	x	x	x	x	x	x	x		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Establish guidelines for performance standards	x			x	x	x		x	x	x	x		x	x		x	x		x	x	x	x		x	x	x					x	x	x	x		x	x	x			x	x	x	x		x	x	x	x	x
Develop teacher preparation standards	x	x		x		x	x	x		x	x	x		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		x	x
Develop recertification standards	x	x		x		x	x		x	x	x	x		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Determine occupational experience requirements for vocational education certification standards	x	x		x	x	x	x	x	x	x	x	x		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		x	x	x	x	x	x	x	x	x	x	x	x	x	x		x	x	x	x	x	x

An analysis of the responses reveals three things:

1. In regard to questions one, three and four, there has been little change in the state agencies' responsibilities, since most of those agencies in 1977 were already involved in establishing criteria for certification, teacher preparation, and recertification standards. The most significant change that has taken place is that today a few more states are now participating in the completion of those responsibilities than in 1977.
2. The responses to question two show that a significantly larger number of states in 1986 are actively involved in the development of guidelines for performance standards of their vocational-technical personnel. In 1977 60% of the states were responsible for that function; in 1986 72% were completing that function.
3. Perhaps the most marked change that has occurred is shown by the responses to question five: ten more states in 1986 are involved in determining occupational experience requirements for certification. Individual comments recorded from the telephone interviews also support that occupational work experience is one of the most critical areas of need that vocational education has to address today.

Types of Certification

The recent telephone interviews supported the fact that basically the same certificates and degrees used for general certification are in existence today for vocational education. This situation has not changed since 1977 when Miller and Roehrich's study was conducted. Miller and Roehrich quoted Stinnett (1968) for the description of the categories of certificates. In this report, the same description is used:

> In the first category (term) are life, permanent, limited, continuing, and provisional or probationary certificates. In the second category are regular, standard, professional, and emergency or substandard. In the third category are blanket or general (with no teaching fields endorsed, only the school level of authorized teaching), endorsed (on which the authorized school level or subject and field are recorded), and special field (issued for each special field, such as art or music). (Stinnett, 1968, p. 433)

The most noted differences in the types of certification granted rests primarily between secondary and post-secondary levels. All states require their secondary, full-time instructors to receive certification. All but seven (7) states require their secondary part-time instructors to have it as well. The situation, however, is not as clearly designed for post-secondary instructors. While 60% of the states now mandate that their full-time, post-secondary instructors earn certification, only 73% of those same states require that of their part-time staff. In fact, some individuals interviewed on the telephone felt that mandated rigid certification standards, coursework, and exams are considered to be a detriment when hiring competent, part-time instructors, especially when they are to teach unique occupational courses. Often individuals will refuse to teach a course or two for institutions if they are required to complete coursework and other requirements first just to obtain the credentials. But in spite of these isolated comments, the trend today seems to definitely be in the direction of requiring some kind of accountability and certification credentials for the part-time instructors of vocational-technical education. Also, it is important to note that when part-time instructors are mandated to complete certification standards in almost all cases the requirements to fulfill are the same as for full-time personnel.

One of the main differences between general and vocational-technical teacher education is that most states today also require work experience in the occupational education areas related to vocational-technical education before certification is granted. The amount of work experience required from state to state (of those requiring it) varies considerably. Plans ranged from one year plus the successful completion of the NOCTI and educational credentials to ten years for an individual with only a GED or high school diploma. In the latter case some states' programs also mandated that university coursework be completed as well.

Combinations of certification requirements that include a work experience component vary considerably, especially for the post-secondary area. Some of the programs that vary widely in their requirements are described below:

Description of Post Secondary and Secondary (When Applicable) Models

Program I

GED or High School Diploma
University coursework (18 semester hours)
10,000 clock hours of related work experience
Successful passing of the NOCTI exam--50% of work experience will be waived

A.S. or B.S. Degree
University coursework (18 semester hours)
4,000 clock hours of related work experience
Successful passing of the NOCTI exam --50% of work experience will be waived

Program II

B.S. Degree, plus 9 hours of coursework, plus 2 years of work experience--
or
Ed. Degree, plus 6 hours of coursework, plus 2 years of work experience--
or
6 years of work experience

Program III

No degree
Two years of technical training (6000 hours)
Three years in industry, one of those being in the last 5 years
Coursework--15 hours of teacher education plus 9 hours in practice teaching

Program IV

No specific work experience hours or requirements in general --
or
Varies with the situation

As these four programs reveal there is considerable variance among the requirements between the states. The factor that brings continuity to all is the work experience hours.

As described, work experience is currently an integral part of the certification process for vocational-technical education. The states that require certification vary in their approaches to document the work, however. The most commonly used method is to ask that the instructors have their previous employers verify their hours of work and responsibilities. In the cases where individuals are currently employed, the same system applies. In both cases, documentation appears in writing in the instructors' files.

One problem, reported by many state staff, related to this system of documentation is that it is very difficult to always get verification on past work experiences. Because of our changing economy, the failure or consolidation of many businesses, and the shifting of workers in our society, accurate reports of the quality of work experiences that an individual had encountered are often difficult to obtain. Quantity of work hours can always be documented by employer IRS forms. As a result, some states are moving to the adoption of supervised work experiences, whereby the university faculty and/or state agency staff work cooperatively with employers to place instructors in jobs that will provide quality work experiences. In nearly all cases the instructor is paid, and he or she often receives university credit for the training. Some states are even waiving some of the required number of work experience hours for participating in this kind of program. The rationale used is that the quality of on-the-job training is more important than the quantity of hours worked. The programs often run for one semester or for a summer session, and a current title is Technological and Occupational Field Experience Program.

Features of State's Vocational-Technical Teacher Certification Programs

The three main components of vocational-technical teacher certification appear to be the mandatory coursework, work experience(s), and more recently, competency testing. Since work experience requirements were already discussed, this section will concentrate primarily on coursework and competency testing.

For most secondary programs, the coursework culminates in a degree. One exception would be the Trades and Industrial area, which makes accommodations in some of the states. Generally, the coursework is administered by colleges and universities who are recognized by the state governing agencies as the appropriate and accredited institutions for delivering the instruction. In a few cases, some vocational-technical schools, through programs such as Professional Development Plan programs, are in charge of their own certification, coursework, etc., and work directly with the State Agencies, consequently, bypassing the Institutions for Higher Education. This latter example, however, seems to be the exception.

A growing trend for the development of instruction and coursework appears to be the wider acceptance of performance based education. Numerous states reported on programs and courses that utilized the Teacher Education Modules developed by the National Center for Research in Vocational Education at The Ohio State University. Some states reported that the competencies from the modules are used as the criteria for basic component areas associated with the professional development of their instructors. Other states described how they are using the modules as their basic units of instruction for coursework and instruction. One eastern state is even computerizing many of the competencies and has begun the development of software programs that will measure student competence via the microcomputer. Still another state reported the development of video tape instruction, based upon the module material. Others are finding the use of the modules is a viable means for delivering/supervising instruction to instructors in the rural areas of their states.

Personnel in the states had difficulty assigning a rating to what percentage of their program was competency or performance based. Consequently, that question could not be answered or tallied accurately on the questionnaire. It is important to document, however, that all fifty states did acknowledge some program involvement that was performance based. The determining factor seems to be the individual instructor or the institution that was involved.

A "new trend" that appears to be emerging across the country is the use of mentors or master teachers in an apprenticeship program for new instructors. Traditionally, this program was instituted at the end of a teacher preparation program and was called student teaching. More and more, however, institutions and states are finding that matching a new instructor with a master instructor at the beginning of the teaching experience is a viable solution to effective teacher training. This is especially helpful in assisting part-time personnel, particularly in the states where the part-time instructors are not required to complete any vocational-technical certification requirements. Another situation where this practice seems to be used more frequently is in the rural areas of the states. These isolated geographic areas present particular problems in that: (1) instructors are more difficult to hire for many of their specialty courses; and (2) instructors often live too far from colleges or universities to participate in the certification programs that those institutions offer. Apprenticeship programs are acceptable, alternate programs of instruction providing that the guidelines and activities are spelled out clearly between the master teacher and the new instructor. Other terms that seem to be synonymous with this program are "internship" and "mentorship".

Coursework required for vocational-technical certification ranges from that customized to meet the needs of the vocational-technical institutions in the state to more standardized traditional teacher education programs in the colleges and universities. Some states combine the populations when delivering the instruction. Other states separate them and teach courses of different, but similar content at each level--secondary and post-secondary. There are mixed reactions to this. At a time of diminishing enrollments and the demand for greater student credit hour production, some institutions of higher education justify the combined enrollments at the expense (sometimes) of the characteristics of the populations served. Other institutions are developing outreach programs around their states, cancelling course sections, experimenting with alternative approaches to instruction, or even attempting various innovative media and telecommunications approaches, if the equipment systems are in place in their states.

If state guidelines and standards are established, the courses offered to meet those requirements are generally designed following the state standards. If an exception was noted, it was described as being the problem of the individual instructor and not that of the institution delivering the instruction. More frequently business and industry are expressing a concern to several State Departments in that they also need instruction in many of the teacher education courses. This is especially true for larger companies who have departments responsible for the training and retraining of their employees. The smaller companies also, have similar training and retaining needs. Some state departments are responding. The two general patterns of responses seem to be:

1. The individuals from business and industry participate in the same program that is required for vocational-technical instructors.

2. The universities will customize some of the training, and in some instances, even deliver courses at the location of the plant, or via video or telecommunications if the equipment systems are in place.

In no instance did this survey uncover where a state had separate certification guidelines established for instructors in business and industry. The need for this is clearly becoming a trend, though, and we should note that it is the vocational-technical personnel who are responding in states establishing such corporate training programs.

When asked for suggestions for program improvement approximately 30% of those interviewed said that what is needed is a better instructional process for coordinating vocational and academic instruction in the classrooms. The academic teachers need instruction on how to better apply their subject matter areas to the world of work, and the vocational educators need strategies on how to reinforce basic skills and principles in the occupational setting. Recently, there has been a trend to develop curriculum that teaches how to incorporate the best of both areas. Many seem to feel these efforts need to be expanded.

Another suggestion in the area of program improvement was in regard to the use and training in microcomputers. Approximately 25% of the states' personnel felt that this area should be strengthened, and that the vocational-technical instructor should have minimal skills in the use of this kind of equipment. Several of the individuals suggested that vocational-technical education should even assume the leadership role in requiring this kind of instruction. "It appears to be a natural for our area," was one of the comments.

One of the most controversial areas for certification programs on all levels is the issue of competency testing. According to the *1984 Phi Delta Kappa Teacher Certification report*, institutionalizing standardized testing procedures and exams is reported as one of the major educational reform efforts affecting general secondary (elementary and others, as well) education programs in the country. In fact, this seems to be the one change in the states' programs that has received most of the public's attention over the past few years.

This reform affects vocational-technical certification, too, since many general secondary and some elementary education teachers who teach vocational subjects must complete the requirements for the secondary or elementary areas. Also, many post-secondary programs are presently adopting the same or similar competency testing procedures as those in operation for the elementary and secondary programs.

Table II shows another comparison of the changes that have occurred over the last nine years, in regard to the individual states responding to the pressures of institutionalizing competency testing procedures. Again Miller and Roehrich's (1977) study was used for comparison. The first five columns on the table (in each section) are exact replications of the questions they asked of the state agency personnel in 1977. The sixth column, to the right of section two, was added to obtain more current data.

Based upon the 1986 responses, it is evident that a major shift is occurring in the states towards adopting some method for competency testing. One of the major areas of change is in the adopting of the NOCTI as a test for measuring occupational competency. It is also evident that the NTE or some equivalent to it, developed by the states themselves, is another national trend.

While there are considerable arguments for and against the accuracy and validity of a paper and pencil measurement of a teacher's performance and ability (Scherer, 1983), Table II clearly shows that the shift in emphasis is definitely in this area. An assumption would be that this situation is a

TABLE II*

COMPARISON OF STATES USING COMPETENCY TESTING AS A PART OF VOCATIONAL CERTIFICATION REQUIREMENTS FOR SECONDARY AND/OR POST SECONDARY PERSONNEL

States	Miller & Roehrich 1977 Results					1986 Results					
	NOCTI competency tests	Competency tests developed by a state teacher education institution	Competency tests developed by local vocational districts	Other types of competency testing (NTE)	No provision for competency testing	NOCTI competency tests	Competency tests developed by a state teacher education institution or the State Department of Education	Competency tests developed by local vocational districts	Other types of competency testing (such as the NTE or other Basic Skills Tests)	No provision for competency testing	Competency tests developed by State Department of Education
Alabama					x	x			x		
Alaska					x						x
Arizona					x	x					
Arkansas					x	x			x		
California			x				x		x		
Colorado					x	x					x
Connecticut	x					x					x
Delaware					x					x	
Florida	x					x					
Georgia	PENDING					x	x				
Hawaii					x		x		x	x	
Idaho	x					x					
Illinois					x						
Indiana					x	x				x	
Iowa					x					x	
Kansas		x				x					
Kentucky					x	x	x		x		x
Louisiana					x					x	
Maine					x	x					
Maryland					x					x	
Massachusetts				x							x
Michigan				x		x					
Minnesota					x						
Mississippi					x	x			x		
Missouri					x					x	
Montana			x					x			
Nebraska					x					x	
Nevada					x						
New Hampshire	x										
New Jersey					x					x	
New Mexico					x						
New York		x							x		
North Carolina					x				x		
North Dakota					x	x				x	
Ohio					x					x	
Oklahoma					x	x					
Oregon				x		x		x	x		
Pennsylvania				x		x					
Rhode Island					x						x
South Carolina		x					x		x		
South Dakota					x	x			x		
Tennessee		x							x		
Texas				x				x	x		
Utah	x					x					
Vermont				x		x					
Virginia					x		x				
Washington					x					x	
West Virginia	x									x	
Wisconsin					x					x	
Wyoming	x									x	

*THE FIRST FIVE COLUMNS IN EACH SECTION WERE TAKEN FROM MILLER AND ROEHRICH'S (1977) STUDY. THE SIXTH AREA (TO THE RIGHT) WAS ADDED TO OBTAIN DATA FOR THE PURPOSES OF THIS SURVEY.

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direct result of the public's cry for accountability. While Table II does not separate post-secondary from secondary education requirements, it is important to note that this testing situation is not as pronounced throughout the country for post-secondary instructors as it is for the secondary teachers.

PROJECTIONS AND RECOMMENDATIONS FOR THE FUTURE

Based on the information, data, summary, and conclusions presented in this paper, the following projections and recommendations are made for the vocational-technical teacher certification area:

1. National Leadership. A critical issue that has surfaced is the lack of strong, centralized national leadership to direct necessary certification reform efforts. The literature clearly shows that considerable national leadership exists in this area, most of which is producing good vocational-technical certification programs. It is recommended that the State Directors of vocational-technical education work with individuals from the National Center for Research in Vocational Education at the Ohio State University to define the leadership roles and responsibilities needed to effect the necessary programmatic changes in this area. These two organizations are suggested because of the documentation that exists in the review of the literature, that provides testimony to their track records for providing strong leadership to the vocational-technical education personnel around the country.

2. Development of Standards. A national effort should be implemented to research and produce standards for excellence in vocational-technical teacher certification. This effort should be initiated and overseen by the State Directors of Vocational-Technical Education. However, the actual research and work should be conducted by a team, organization, or university selected by them, which will be responsible for reporting to them on a regular basis. It is not the intent of this report to design the components of the research study recommended above. The literature does reveal that perhaps some models are already available upon which to build the program, such as the Standards For Excellence in Trade and Industrial Education model

(1985) that was recently completed. The literature also supports the fact that each of the seven subject matter areas related to vocational education (agriculture, business and office, distributive education, health occupations, home economics, industrial arts, and trades and industrial) do have unique features that might/should be examined in such a study, and possibly highlighted in the standardization process. Appendix C and Appendix D contain two management models for consideration if this recommendation should be adopted.

3. Data Base. A vocational-technical teacher certification data base, connecting all fifty states and the U.S. Territories, should be established which would provide the necessary information and current status of the professional development of vocational-technical instructors. This would be especially helpful if recommendation number two would be accomplished, which would require the states to adopt national standards of excellence in this area.

4. Common Terminology. Certification terminology should be defined consistently among the states. Perhaps a national study could accomplish this as well.

5. Certification in Emerging Areas. Vocational education should require instruction and training for certification in the new areas that are emerging, since this affects the competence of our instructors. An example would be to require all instructors to have minimal skills in computer (microcomputer) usage and training.

6. Ongoing Professional Development. Continuing professional development, whether it be for initial certification or recertification, is a problem reaching critical proportions, especially for instructors in the rural areas of the nation. This situation must be addressed soon, and alternate delivery systems of instruction must be designed and developed to assure that these instructors will receive quality instruction. Systems to help alleviate this problem could/should be planned jointly among the personnel at the State Departments.

of Education, educational institutions, and representatives from business, industry, and commerce.

7. Apprenticeship Programs For New Teachers. For those instructors who come directly from business and industry, and especially the part-time instructors, it is recommended that the states adopt mentoring or apprenticeship programs to assist the new instructors during their first few months in the classroom. Such programs should be developed, field-tested, and implemented in the schools. The more successful ones need to be shared with all the states.

8. Work Experience. Occupational updating appears to be one of the most critical factors for vocational-technical instructors today. Instructors in all areas need to return to the work environment on a regular basis to learn the new techniques and to study the advanced technologies that are constantly being introduced into the work place. Many of the present vocational-technical teacher certification programs are currently wrestling with the problem of how to strengthen this aspect of their programs, but shrinking federal and state financial support make this an increasingly difficult problem. It is recommended that the whole area of occupational updating be closely examined, the barriers to achieving this be analyzed, and model programs be designed that could be implemented in the various states.

9. Documentation of Prior Work Experience. Documenting prior work experiences required for certification appears to be a problem for many states. It is recommended that the procedures presently being used be further researched and an effective process be designed that could assist the states in obtaining better data related to this area.

10. Competencies and Certification. The vocational-technical teacher certification certificate should contain a listing of the competencies that each instructor is able to perform. The certificates issued to instructors presently are documents that merely validate that an instructor has met all the

minimal requirements for certification and, therefore, is entitled to obtain a certificate. A more effective measurement procedure of an instructor's competence would be to simultaneously document his or her performance through competency statements. Again, if standards for excellence were identified and developed, that process could automatically produce a listing of competencies.

11. Emerging Instructional Areas. New areas of concentration, such as entrepreneurship education or laser technology, need to be analyzed on a regular basis and added to each state's listing of endorsement areas as viable instructional areas. Presently, the national system for doing so is inadequate to handle the fast changing job market. The most viable method in existence today seems to be to validate a minimum number of work experience hours in an area and require successful completion of some coursework, and/or an exam. The instructor and program are then approved to be started, regardless of whether the area is listed on an endorsement list or not. While this system does help accommodate the changing workplace and training problems associated with new areas, it appears that it is not the most efficient system for documenting new endorsement areas and it is recommended that it be improved.

12. Testing Procedures. Testing for determining occupational knowledge or competency seems to be a problem in many states, as the procedures used vary from no tests required of any instructors to the requirement that all instructors take and pass selected standardized tests. It is recommended that this area be further investigated. If such an effort were undertaken, then it could automatically become one of the areas to include in a study to produce standards for excellence.

13. Coordination with Business and Industry. As they increase their responsibilities in the role of economic development, vocational-technical educators need to improve communications and to work more cooperatively with business, industry, and commerce around the nation at both the local and national levels. Better communications would provide a

feedback loop into the teacher certification process, which would provide a system for continuous updating of standards and requirements.

14. Updating of Teacher Education Programs. Because of the critical role it plays in the nation's workforce, vocational-technical education needs to continue to revise and update its vocational-technical teacher education programs on an on-going basis. Again standards and requirements should be reviewed regularly to assure that the program components meet the needs of the workplace. The profession cannot afford to become careless in this endeavor.

15. Coordinated Instruction. Vocational-technical teacher certification personnel should provide the leadership requiring that instructors learn the process of coordinating vocational and academic education concepts in all classrooms. There is some evidence that this practice is already being implemented by the number of states that have adopted projects such as the Principles of Technology program. Vocational and academic teachers must continue to work together to learn from each other, and to determine how all instruction should be integrated in the classrooms.

16. Certification Needs of Business and Industry. Vocational education personnel should expand their certification programs to meet the needs of business and industry training demands. A team should be appointed to begin to investigate this area.

17. Marketing Strategies. Vocational-technical personnel, at all levels, need to do a better job of marketing their programs, their profession, and themselves. As was stated earlier, there are many things that vocational educators do well for which they do not receive proper credit. With an appropriate marketing strategy, recognition for the contributions vocational educators make to this nation's economy and workforce could be acknowledged. This recognition would also enhance the image of the instructors in the classroom, which is needed. Perhaps if this kind of strategy could be employed, vocational-technical education might be

able to build more public support and confidence as it restructures its teacher certification programs. The ultimate goal for this effort needs to be to enhance the image of the profession.

18. Recruitment of Women and Minorities. Vocational-technical education must aggressively recruit more women and minorities into nontraditional roles in the various occupational areas. With the increased societal, governmental, and legislative pressures demanding that the profession better serve the needs of these populations, it is imperative that more individuals be recruited and trained to serve in leadership positions in the various areas of vocational-technical education. Individuals who are vocational-technical instructors are such leaders and role models, whether they acknowledge this fact or not. The data show, however, that the leadership is still stereotyped and very few nontraditional models are available in most of the specialty occupational areas. The certification process could serve as a mechanism to support and encourage women and minorities to work through the system and ultimately contribute to the leadership that is needed.

19. Affirmative Action. In our age of accountability, anti-discrimination, and equal rights, it would behoove all of our administrators and instructors to have some training in these areas. The training should be designed to follow affirmative action guidelines and should be such that the information learned could be applied in the work setting or classroom. Vocational- technical education, especially with the Carl Perkins Legislation behind it, could assume a strong, national leadership position in this area. The profession could even coordinate this action with one of its marketing campaigns.

SUMMARY

This report identified the need to complete a survey of the state-of-the-art of vocational-technical teacher certification in the United States. The review of the literature, however, revealed that the documents, research, articles and reports written recently (within the last two years) were not sufficient to use to accurately summarize the current situation. The same search, however, also revealed that a considerable amount of attention was devoted to this subject in the 1970's and even the early eighties. Most of the literature written recently detailed individual and isolated instructional programs presently in operation around the country. Using the descriptions of these, it was determined, was not a totally accurate way to describe the current status of vocational-technical teacher certification today on a national level.

Due to the dearth of recent data related to this area, two questionnaires were designed. Both of these instruments were created as tools to use to obtain first-hand reports and information on the operation of our current, national system for vocational-technical teacher certification. The first instrument was administered to the State Directors of Vocational Education at the American Vocational Association Convention in Atlanta, GA, in December of 1985. Then, in January and February of 1986, all fifty states were called directly and interviewed by telephone to obtain additional information for the second questionnaire. Information and data were combined from both instruments, and the summary of the information is reported in general, national trends for the purposes of this report.

A comparison was made between the Miller and Roehrich (1977) study, which was commissioned by AVA, to study the state agencies responsible for vocational-technical certification and the current situation. Certain items from two of Miller and Roehrich's tables were selected and data regarding those areas was updated. Each state's responses were recorded separately and a tally was made showing the change in the responsibilities assumed by the various state agencies around the country.

Following the comparison made of the state agencies' responsibilities, the basic components of the states' vocational-technical certification programs were described. Where appropriate, new trends and innovative, programmatic solutions to existing problems were highlighted. The descriptions mainly focused on three areas: coursework, work experience requirements, and competency testing. The information used to summarize these sections was gathered from the answers to the two questionnaires. What was especially helpful was the information obtained from the open-ended questions, such as the ones targeted at program improvement.

Finally, several projections and recommendations for vocational-technical teacher certification program improvement were listed, with the purpose of providing direction for the future.

Vocational-technical educators need to continue to assume a leadership role in the designing of their programs. The suggestions made at the end of this report are intended to help aid that process.

APPENDIX A

"The State of The Art of Vocational-Technical Certification in the U. S. Today"

Questionaire I

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UNM
THE UNIVERSITY OF NEW MEXICO
ALBUQUERQUE, NEW MEXICO 87131

To: State Directors of Vocational-Technical Education

From: Norma Milanovich, Coordinator, Occupational/Vocational Education Programs, The University of New Mexico

Subject: A synthesis paper entitled: "The State of The Art of Vocational-Technical Certification in the U.S. Today"

Please answer the following questions regarding the vocational-technical certification process as it relates to your state only.

State: ______________________________

Name: ____________________ Title: ____________________

1. Do you have a vocational-technical certification process in place? Yes_____ No_____
(If no, proceed to question 8)

2. If yes, briefly describe the system:

Number of years in operation: __________

Basic program design: ______________________________
____
____
____
____

3. Does the State Department or do the various universities certify the instructors?

_______ State Department of Education
_______ universities
_______ other (explain)

4. Who do you require to earn vocational-technical certification?

Post-Secondary Instructors	Secondary Instructors
_______ full-time	_______ full-time
_______ part-time	_______ part-time
_______ other (explain)	_______ other (explain)

5. Are your vocational-technical certification requirements different for the post-secondary and secondary education levels? _______Yes _______No
Explain: ______________________________
____
____

6. Please describe anything unique about your program that could/should be highlighted in a national review. ______________________________

7. Name of person in your state to contact for further information on this area:
Name:______________________________
Title:______________________________
Address:______________________________
____
____

8. If no, do you plan to begin a vocational-technical certification program soon?
__________Yes __________No

9. If yes, when?______________
(Year)

10. Do you wish to have a copy of the final paper? __________Yes __________No

Thank You

APPENDIX B

"Vocational-Technical Certification: Where Are We and Where Are We Going?"

Telephone Questionnaire

Vocational-Technical Certification: Where Are We and Where Are We Going?

Telephone Questionnaire

State______________________________

1. Do you have a vocational-technical certification program in place?
_____yes _____no

2. Who do you require to earn vocational-technical certification?

Post-Secondary Instructors	Secondary Instructors
_____full-time	_____full-time
_____part-time	_____part-time
_____other (explain)	_____other (explain)

3. What types of certificates exist for vocational-technical instructors in your state?

Post-Secondary Instructors	Secondary Instructors
_____standard certificate	_____Standard certificate
_____permanent certificate	_____permanent certificate
_____provisional certificate	_____provisional certificate
_____special certificate	_____special certificate
_____supervisor certificate	_____supervisor certificate
_____director certificate	_____director certificate
_____other (explain)	_____other (explain)

4. Does your vocational-technical certification program require:

Post-Secondary Instructors	Secondary Instructors
_____degree	_____degree
_____coursework	_____coursework
_____work experience	_____work experience
_____skill competency testing	_____skill competency testing
_____other (explain)	_____other (explain)
______________________________	______________________________
______________________________	______________________________
______________________________	______________________________

5. How do you measure the competence of your instructors?

Post-Secondary Instructors	Secondary Instructors
______________________________	______________________________
______________________________	______________________________
______________________________	______________________________

6. Does your state have a competency based education program for the vocational-technical certification program?

Post-Secondary Instructors	Secondary Instructors
_____yes _____no	_____yes _____no
If yes, what portion is competency based? ___ 100%	If yes, what portion is competency based? ___ 100%
___ 75%	___ 75%
___ 50%	___ 50%
___ 25%	___ 25%

7. Do you use the NOCTI exam as a substitute for work experience, as it applies toward vocational-technical certification?

Post-Secondary Instructors
_____yes _____no
If yes, explain:__________
____
____

Secondary Instructors
_____yes _____no
If yes, explain:__________
____
____

8. If you require work experience, explain the quantity of hours and the quality of the experiences you require.

Post-Secondary Instructors
____
____
____

Secondary Instructors
____
____
____

9. Must your vocational-technical instructors pass a state exam before they are certified?

Post-Secondary Instructors
_____yes _____no
If yes, name the exam(s).
____

Secondary Instructors
_____yes _____no
If yes, name the exam(s).
____

10. Is the vocational-technical certification program(s) in you state adequate to assure quality instructors in your schools?

Post-Secondary Instructors
_____yes _____no
If no, what needs to be added?__________________
____
____

Secondary Instructors
_____yes _____no
If no, what needs to be added?__________________
____
____

11. Do you require occupational upgrading on a regular basis?

Post-Secondary Instructors
_____yes _____no
Explain Conditions:________
____
____

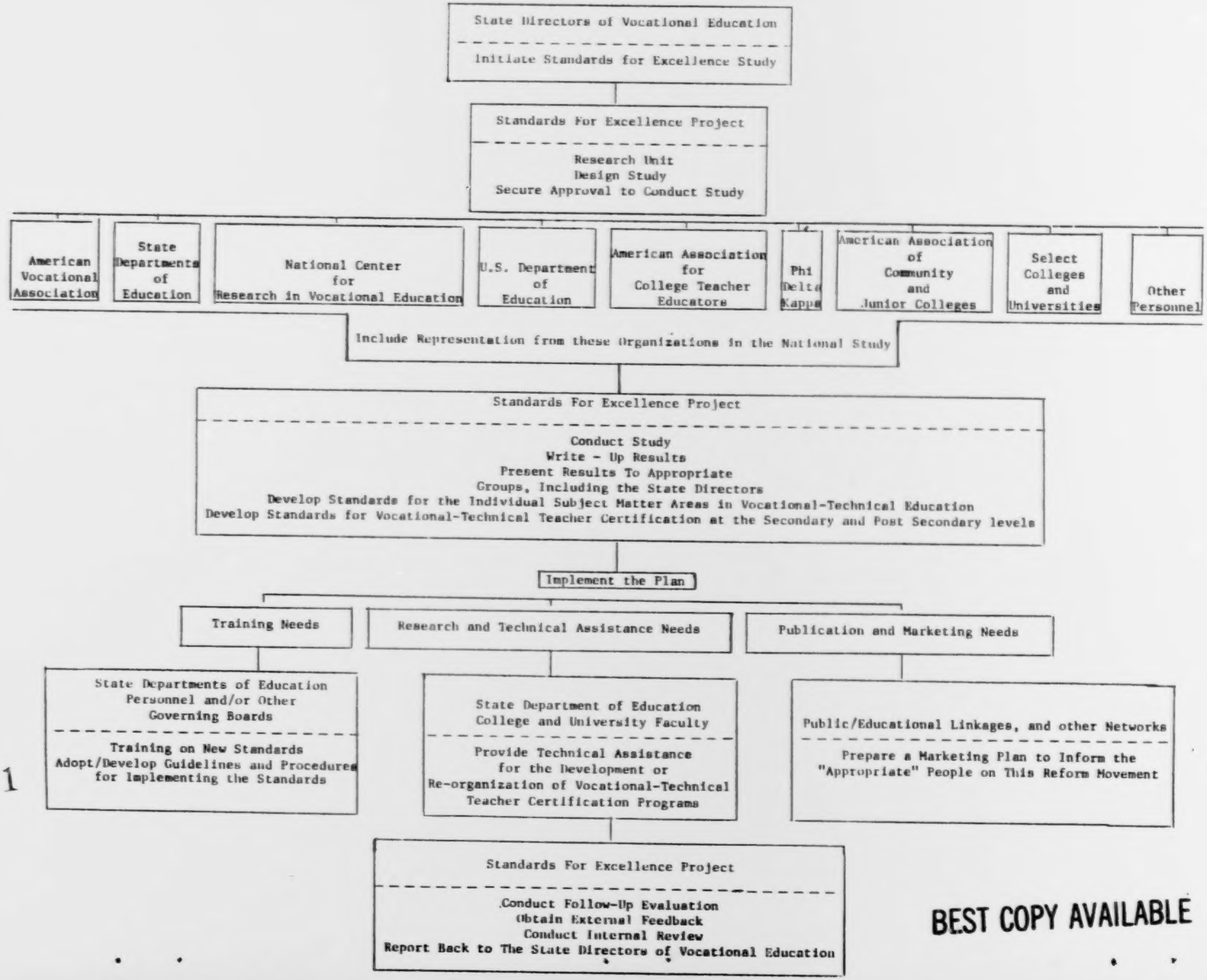
Secondary Instructors
_____yes _____no
Explain Conditions________
____
____

12. Are you a member of the Interstate Certification Project?
_____yes _____no
If yes, how many other states do you work with?________

APPENDIX C

Management Model For The Improvement of The Delivery System for Vocational-Technical Teacher Certification

MANAGEMENT MODEL FOR THE IMPROVEMENT OF THE DELIVERY SYSTEM FOR VOCATIONAL-TECHNICAL TEACHER CERTIFICATION



State Directors of Vocational Education
Initiate Standards for Excellence Study
Standards For Excellence Project
Research Unit
Design Study
Secure Approval to Conduct Study
American Vocational Association
State Departments of Education
National Center for Research in Vocational Education
U.S. Department of Education
American Association for College Teacher Educators
Phi Delta Kappa
American Association of Community and Junior Colleges
Select Colleges and Universities
Other Personnel
Include Representation from these Organizations in the National Study
Standards For Excellence Project
Conduct Study
Write - Up Results
Present Results To Appropriate
Groups, Including the State Directors
Develop Standards for the Individual Subject Matter Areas in Vocational-Technical Education
Develop Standards for Vocational-Technical Teacher Certification at the Secondary and Post Secondary levels
Implement the Plan
Training Needs
Research and Technical Assistance Needs
Publication and Marketing Needs
State Departments of Education
Personnel and/or Other
Governing Boards
Training on New Standards
Adopt/Develop Guidelines and Procedures
for Implementing the Standards
State Department of Education
College and University Faculty
Provide Technical Assistance
for the Development or
Re-organization of Vocational-Technical
Teacher Certification Programs
Public/Educational Linkages, and other Networks
Prepare a Marketing Plan to Inform the
"Appropriate" People on This Reform Movement
Standards For Excellence Project
Conduct Follow-Up Evaluation
Obtain External Feedback
Conduct Internal Review
Report Back to The State Directors of Vocational Education

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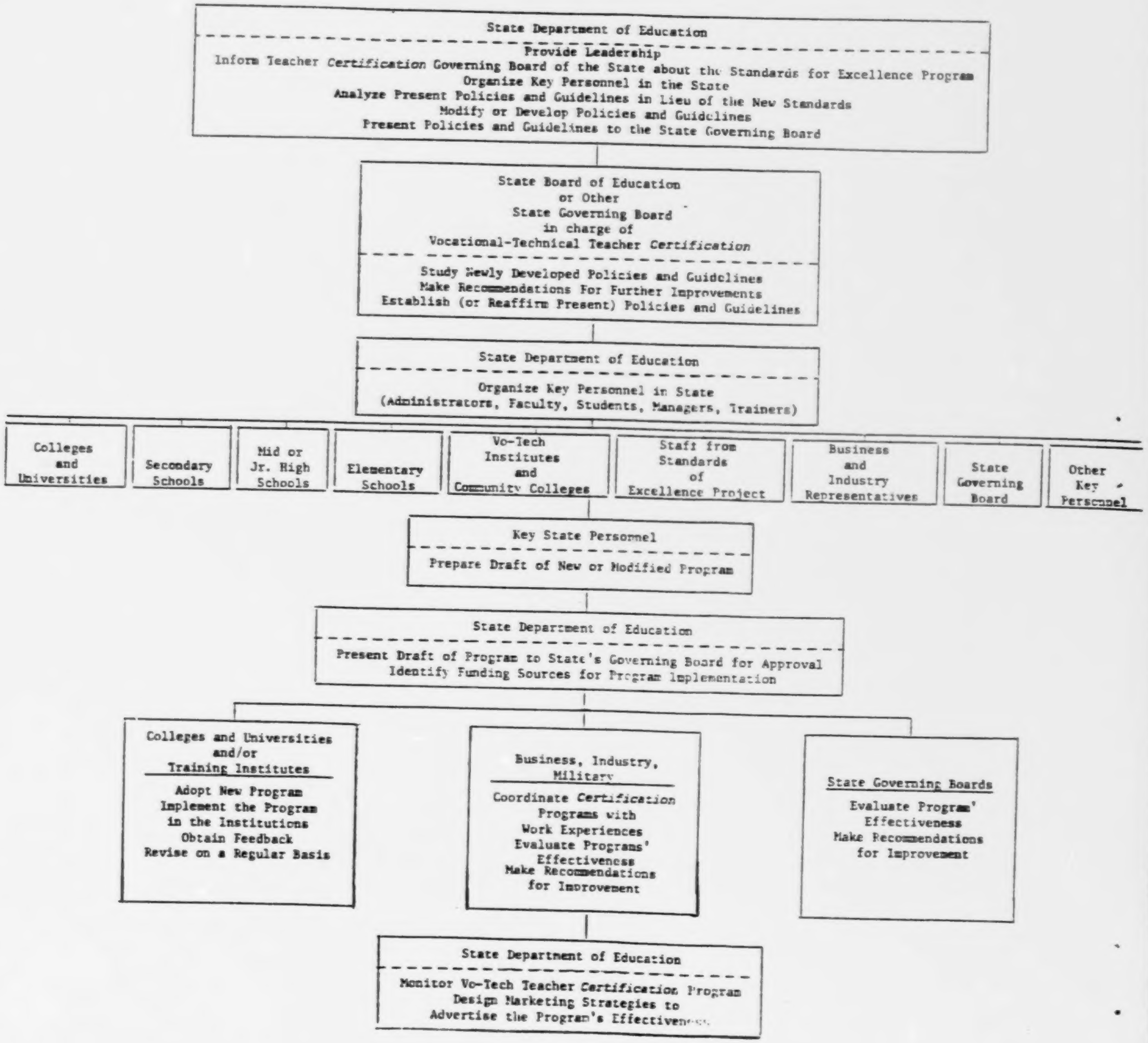
APPENDIX D

Management Model To Use In The Implementation of Vocational-Technical Teacher Certification Programs

One Management Model for State Departments of Education
To Use in the Implementation of
Vocational-Technical Teacher *Certification* Programs



State Department of Education

Provide Leadership
Inform Teacher *Certification* Governing Board of the State about the Standards for Excellence Program
Organize Key Personnel in the State
Analyze Present Policies and Guidelines in Lieu of the New Standards
Modify or Develop Policies and Guidelines
Present Policies and Guidelines to the State Governing Board

State Board of Education
or Other
State Governing Board
in charge of
Vocational-Technical Teacher *Certification*

Study Newly Developed Policies and Guidelines
Make Recommendations For Further Improvements
Establish (or Reaffirm Present) Policies and Guidelines

State Department of Education

Organize Key Personnel in State
(Administrators, Faculty, Students, Managers, Trainers)

- **Colleges and Universities**
- **Secondary Schools**
- **Mid or Jr. High Schools**
- **Elementary Schools**
- **Vo-Tech Institutes and Community Colleges**
- **Staff from Standards of Excellence Project**
- **Business and Industry Representatives**
- **State Governing Board**
- **Other Key Personnel**

Key State Personnel

Prepare Draft of New or Modified Program

State Department of Education

Present Draft of Program to State's Governing Board for Approval
Identify Funding Sources for Program Implementation

Colleges and Universities
and/or
Training Institutes

Adopt New Program
Implement the Program
in the Institutions
Obtain Feedback
Revise on a Regular Basis

Business, Industry,
Military

Coordinate *Certification*
Programs with
Work Experiences
Evaluate Programs'
Effectiveness
Make Recommendations
for Improvement

State Governing Boards

Evaluate Program'
Effectiveness
Make Recommendations
for Improvement

State Department of Education

Monitor Vo-Tech Teacher *Certification* Program
Design Marketing Strategies to
Advertise the Program's Effectiveness

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APPENDIX E

DEFINITIONS OF TERMS

DEFINITIONS OF TERMS

Listed below are the terms that are considered unique to the vocational-technical teacher certification process. Definitions are provided to assist individuals who might not be familiar with the terminology. Keep in mind that these are the definitions used for writing this report. In reality, each state may have a different rule, exception, or application of a principle applied to that term, which could modify the meaning somewhat.

Candidate - A person seeking certification in any of the vocational-technical areas. (As defined by the Pennsylvania State Regulations Document.)

Certificate - A document prepared and issued by the governing department indicating that the holder has completed a professional preparation program and is qualified to perform specific professional duties. (As defined by the Pennsylvania State Regulations Document.)

Certification - The process of determining and documenting that an instructor has, in fact, met all the requirements prescribed by a state's governing body (such as the State Department of Education or State School Board). Upon successful completion of the designated requirements, the individual receives a certificate (with stipulations), but is then allowed to teach in approved areas.

Inactivity - A certificate or commission shall be inactive if the holder fails to meet certification requirements relating to continuing professional development. (As defined by the Pennsylvania State Regulations Document.)

Initial Certification - The first step in the certification process which provides new applicants with the necessary credentials to begin to teach in their areas.

Internship - (1) A relatively short period of time (usually one or two semesters) during which an instructor spends time actually working in a teaching or job situation (with or without pay) in order to gain meaningful experience/expertise in a particular aspect of that vocation. College credit is often granted for these experiences. (2) A second definition of the term "Internship", as used in education, is synonymous with the phrase "student teaching," wherein an aspiring teacher candidate is placed in an actual classroom situation for a period of time (usually a semester) under the guidance of a cooperating instructor and a university supervisor.

National Occupational Competency Testing Institute - (NOCTI) - A nonprofit educational corporation which provides high quality teacher and student occupational competency examinations to the vocational education community.

National Teacher's Exam (NTE)- A national, standardized exam that has been adopted by several states for use as the "final" exam by the teachers who are exiting the teacher education institutions. The exam is designed to be a reflection of what has been studied in the teacher preparation programs. Individuals taking this exam in states where it is mandatory must pass it before they will receive certification.

Occupational Field Experience - Designated number of required clock hours of documented, specific work experience in the field in which a vocational-technical instructor has elected to gain certification to teach. These work experiences are part of the certification requirements of many states.

Occupational Upgrading - Normally associated with teachers of vocational-technical subjects, it constitutes those steps/actions taken by such instructors in order to keep themselves current in all necessary aspects of the specific field in which they teach. These can include liaison visits, training periods in business, industrial, or school environments, professional development workshops, coursework, etc.

Passing Score - Satisfactory achievement on a required exam. (As defined by the Pennsylvania State Regulations Document.)

Preparing Institution - A college or university that offers a program approved by the Department to prepare professional personnel for employment in the public schools. (As defined by the Pennsylvania State Regulations Document.)

Professional Development - Includes, but is not limited to, those steps taken to acquire teacher certification. This process implies that teachers will continue to expand their professional capabilities to ensure future/continued certification, broaden teaching skills, strengthen administrative capabilities, and facilitate professional advancement.

Recertification - The renewal process for an expired certificate.

Technological and Occupational Field Experience Program A planned experience, often in the summer, designed to give participants supervised work experience and field experiences in business, industry, government agencies, and/or other potentially productive work situations. The objectives of the program are:

1. To acquire first-hand work experience designed to increase teachers' credibility with the students in their classrooms as well as with employers and the general public;
2. To develop skills in integrating vocational and academic concepts that relate classroom instruction to the world of work and that reinforce basic and life skills;
3. To develop an awareness of new equipment, business/management procedures, industrial trends, regulations, etc., related to their specific areas;
4. To utilize job tasks as a means for upgrading skills related to particular fields of instruction;
5. To experience a variety of affective reactions to aspects of the situations such as the stress, pressure, frustrations, and sense of achievement which are part of every job.

(Teachers will acquire techniques that will help them to deal more effectively with environmental situations.); and

6. To give educators a sense of how business must operate in order to survive in our economic system.

Term of Validity - A period of time in which the holder of a certificate is entitled to perform the professional duties for which the certificate was issued. (As defined by the Pennsylvania State Regulations Document.)

Test of Basic Skills - An assessment of a candidate's knowledge of an academic field or discipline to be taught in the public schools. (As defined by the Pennsylvania State Regulations Document.)

Test of Subject Matter - An assessment of a candidate's knowledge of an academic field or discipline to be taught in the public schools. (As defined by the Pennsylvania State Regulations Document.)

Test of Professional Knowledge - An assessment of a candidate's knowledge of educational theory, principles of human growth and development, educational psychology and other subjects directly related to teaching. (As defined by the Pennsylvania State Regulations Document.)

Test of General Knowledge - An assessment of a candidate's knowledge in the fields of literature, fine arts, mathematics, science and social studies. (As defined by the Pennsylvania State Regulations Document.)

Work Experience - The on-the-job training in specific skill areas that many vocational-technical instructors need to obtain vocational-technical certification in their areas. The work experiences and the amount of time on the job(s) must be verified by the teachers' former and present employers.

STRUCTURED EMPLOYMENT EXPERIENCES

Jack McElroy, Professor
College of Education
Department of Vocational Education
University of Kentucky

Presentation at the
CCRVE SYMPOSIUM

Washington, D.C.

May 22, 1986

FORWARD

This paper is an attempt to review various articles and studies concerning the technological updating of vocational/technical teachers. It is also the intent of this paper to present the approaches that various states and localities are using with success. In a review of the literature (ERIC search), it was found that there has been very little research investigating this problem at the national level. However, The National Center for Research in Vocational Education at The Ohio State University, Columbus, Ohio, conducted a three-phase study to examine the extent and nature of the problem of keeping secondary and post-secondary vocational/technical teachers up-to-date. The study identified the number of teachers considered in need of update (1982), the barriers to the process of technological update (1983) and the most effective approaches to technology update (1984). This paper will use the findings and recommendations of The Ohio State study as its best and most reliable source of documented research.

Other articles and studies were found to be useful to support the various approaches to the updating of vocational secondary and post-secondary teachers. In addition, officials from fourteen State Departments of Education and/or Universities (Michigan, Kentucky, Missouri, Iowa, Indiana, California, North Carolina, Illinois, Florida, New York, South Carolina, Ohio, Maryland, and Oklahoma) were contacted by phone to discuss approaches that they are presently using to keep their vocational personnel technologically up- to-date.

For the purpose of planning, organizing, and implementing technological update programs, this paper will suggest approaches and procedures that have proven to be successful. The major focus will be placed on those approaches that relate to "Structured Employment Experiences": Internships, Education and Industry Staff Exchange, and Part-Time Employment.

INTRODUCTION

Rapidly expanding technologies and the application of new technology within existing occupations have been a major concern in vocational education. The rate of technological change in the workplace is now taking place at a faster rate than ever before in our history. The electronic computer, in itself, has made a significant impact on revolutionizing the industrial world. A few examples of this are computerized diagnostics in the automotive industry, word/data processing in office occupations and robotics in industry.

Vocational education's commitment to business and industry is to ensure that the vocational students receive instruction that is current and that is up-to-date with the real world of work. However, keeping vocational education teachers up-to-date in the skills, knowledge, and employability skills required for job entry employment and upgrading training programs are major problems facing vocational education. Education has always been one step behind the real world of work, where the tools, processes, materials, and equipment have always been more sophisticated than what has been available in our vocational education programs. Today, the technological changes taking place in most occupational areas are occuring at a rate that is not even predictable in most cases. Changes in both the technology and the workplace have created a critical state of affairs for vocational education.

BACKGROUND AND STATEMENT OF NEED

The need for technical updating among vocational educators has been documented in various studies. For example, George Storm (1976) of Ferris State College, in a "state of the art" review for the New Jersey State Department of Education, addressed the importance of technological update at the post-secondary level in the following statement:

"Inservice programs have almost become a requirement in the profession during the last decade. Technological changes in business and industry leave no alternative choice to post-secondary occupational education. If they want to remain competent instructors, they must maintain expertise in the latest technical development in their respective occupation (p11)."

However, Charles Doty and Frank Coppelle, in a paper presented at the American Vocational Association Annual Meeting (1981), concluded that inservice technical upgrading of post-secondary technical instructors was found to be the most ignored area of staff development (p1).

The most extensive documentation of the need for technical updating appears in a status report compiled by Hamilton, Wonacott, and Simandjuntah (1982) for the National Center for Research in Vocational Education.

Need at Post-Secondary Level

In this study, Hamilton, Wonacott and Simandjuntah reported (p. 12-40) that nearly half (47%) of the post-secondary teachers in eight states had critical or substantial need for updating. In real numbers, this was an estimated 4,462 post-secondary instructors. The post-secondary level findings were based on a total of 9,612 post-secondary instructors.

When the need for post-secondary teacher technological update was broken down into occupational service areas and rank ordered from area of greatest need to area of least need, the rank order was as follows:

Office occupations--1,381 instructors (54 percent of 2,558 instructors)

Technical and Trade and Industry--2,210 instructors (49 percent of 4,511 instructors)

Agriculture--144 instructors (47 percent of 302 instructors)

Home Economics Occupations--163 instructors (42 percent of 389 instructors)

Health Occupations--421 instructors (31 percent of 1,359)

Marketing and Distribution--133 instructors (27 percent of 493 instructors)

Need at the Secondary level

Hamilton, Wonacott, and Simandjuntah found that thirty percent of secondary vocational teachers in seven states were considered to have critical or substantial need of updating. This was an estimated 8,178 secondary teachers. The total number of teachers included at the secondary level was 27,487, representing seven states.

As with the post-secondary level data, this information was also broken down into six occupational service areas, which were rank ordered from area of greatest need to area of least need. The resulting rank order was as follows:

Technical and Trade and Industry--
2,707 teachers (43 percent of 6,380 teachers)

Health Occupations--449 teachers (40 percent of 1,122 teachers)

Agriculture--1,786 teachers (30 percent of 5,952 teachers)

Office occupations--1,669 teachers (27 percent of 6,206 teachers)

Marketing and Distribution--542 teachers (22 percent of 2,501 teachers)

Home Economics Occupations--1.025 teachers (19 percent of 5,326 teachers)

Hamilton, Wonacott, and Simandjuntah also found that, even though vocational teachers recognized that they need continual updating in skills and knowledge, they do not by their own volition pursue updating as a general rule. In many cases there are no incentives to motivate teachers to pursue technical updating. Also, teaching institutions and state education agencies tend to place greater emphasis on pedagogical updating than on technical updating. Adding to this problem is the fact that there has been less teacher turnover accompanied by longer tenure in teaching positions.

Further evidence supporting the need for technical updating was obtained by the author in a recent telephone survey of officials from fourteen State Departments of Education and/or universities (Appendix A). The following is a summary of that survey:

> There was no disagreement about the absolute necessity of the need for technological update of vocational technical teachers. All those contacted by phone state that technological update was a very important part of professional development in their state. They also said that their vocational teachers are involved in a combination of approaches for technological update. (Table 1) All of the states have some type of funding allocated to facilitate vocational teachers who desire technological updating.

New York, Michigan and Kentucky utilize statewide programs for technological update. New York subsidizes business and industry up to $1,000 to involve their vocational teachers in part-time structured employment experiences. Michigan's statewide program involves vocational teachers in workshops conducted by business-industry personnel; they call this the hitchhike approach. Michigan's vocational teachers hitchhike on business and industry workshops that are planned and organized to keep their employees up-to-date with the latest advances in their respective jobs. Kentucky's is a state operated and funded staff exchange program for all vocational teachers. The program is designed to enable vocational teachers to gain short term, up-to-date work experience. The staff exchange program provides a communication link between vocational personnel and the business and industry personnel that employ the graduates of the vocational programs.

The other states contacted primarily use workshops, part-time employment and work experience internships as their approaches to update vocational teachers. However, officials that were contacted felt that many teachers did not take advantage of existing opportunities for technological updating.

One of the problems of technological updating is that the most competent teachers want to attend updating activities on a regular basis and teachers who really need updating do not have time or refuse to attend such activities. Technological updating is important enough that states need to make this a required part of employment. It should be a requirement for teacher certification and/or renewal of certification for all vocational personnel.

STATEMENT OF PURPOSE AND DEFINITION OF TERMS

If vocational education is going to survive the 1980's and 1990's, one of the critical issues that must be addressed is the technological update of its teachers.

The purpose of this paper is to investigate various approaches that states are using to facilitate vocational educators in staying current with the skills, knowledge, and employability skills required and expected in the business and industrial world. This paper will review four approaches that have been successful in keeping vocational education personnel technologically up-to-date, emphasizing those approaches utilizing teacher work experiences. In reviewing these approaches, the paper will focus on the following questions: How does the approach work? What are its advantages and disadvantages? What factors facilitate its implementation? What barriers hinder its implementation?

For the purpose of this paper, "technological updating" will be defined as follows:

> "Technological updating" is the process of keeping vocational teachers current with occupational skills, knowledge and

employability skills required in the workplaces in which their students are being employed.

As the process of technological updating takes place, it should be reflected in a variety of teacher actions in three different areas of the instructional program: the program curriculum, the instructional activities and materials, and the physical facilities.

For example, as a consequence of the technological update activity, the teacher may revise his/her course of study, add new skills and prerequisite knowledge, and/or revise existing instructional materials. Industries can be instrumental in updating physical facilities. More specifically, the curriculum update may include the following activities:

--Adding skill (task) statements to task lists or competency profiles.

--Writing and/or revising performance objectives to reflect program changes in standards, etc.

--Developing instructional activities and instructional materials to present knowledge and skills added to program curricula.

--Revise lesson plans and/or modules to reflect new objectives.

Similar activities may result with regard to the acquisition of tools, equipment, and machinery or other physical facilities. Often, the addition of new technology skills in the program will require, or depend on, the availability of new equipment. As a result of technological updating, teachers may develop documentation to support a request for additional funds to purchase or lease the equipment. As an alternative teachers may work with administrators to document a request to business or industry for the gift or loan of the equipment.

APPROACHES TO TECHNICAL UPDATING OF TEACHERS

To date, there has been very little research into strategies for technological updating of vocational education teachers.

George Storm's national study on post-secondary technical update (1976) determined that various technological upgrading activities across the nation were being used. However, he stated in his study that "without adequate research data on this subject (s), we can only suspect that, in spite of these activities, many post-secondary vocational-technical instructors fail to participate in them." Storm, himself, recommended the need for further research on the subject.

Robert Roehnch, in a later study (1979), addressed technological updating in two-year technical colleges. However, his focus was on training assessment rather than on structured work experience activities.

Parsons, 1979, describes a staff development activity that meets client needs (student), updates occupational program faculty expertise and establishes a working relationship between business, industry and the college. With the realization that occupational faculty had been out of the business or industrial setting for as much as a decade a "return to industry" process was developed. This was made possible through a combination of federal funding and community planning.

Using data drawn from a survey of local industries, Hagerstown Junior College obtained a grant designed to return all of its career faculty to industry over a five year period. The goal was clear. "Return to industry" will provide the opportunity for the occupational faculty of the college to reinforce, update or expand the skills and knowledge required to keep current with changing technology within their professions.

It was the responsibility of the faculty member requesting the return to industry to submit a proposal and identify the business or industry that agreed to host the activity.

Criteria were established to assess the proposals and an evaluation process developed.

Evaluation included an on-site assessment conducted by the Dean of Instruction or the participant's division head. This visit included observation of the faculty member at work, discussion with the on-site supervisor, and dialogue involving the faculty member, supervisor and college evaluator. A summary report is prepared by the evaluator that is reviewed by the faculty member and supervisor. In addition, a summary is prepared by the supervisor which includes the impact that the faculty member's activity had on the operation of the host business or industry and one is prepared by the faculty member analyzing how the return to industry experience will be integrated into his/her teaching responsibility.

In the first two years of the project thirteen of the initial sixteen proposals have been approved and conducted. Ten of the colleges' fourteen occupational programs have had a faculty member return to industry.

Outcomes of the return to industry cited are:

--Each participant was able to perform a service for the host business or industry. Therefore, both the faculty members and the host benefitted.

--Increased understanding developed between the host and the college.

--Increased understanding has resulted in an increase in placements for program graduates with host businesses and industries.

--Hosts were unanimous in requesting continued participation.

After two cycle applications it was concluded that return to industry is a viable strategy for updating the technical skills of community college faculty and recommended that the potential for replication of this program in other educational institutions in the State of Maryland be explored.

Bowan, Johnson and Miller compiled a directory, 1981, to identify industries in the Mississippi ARC region that would be willing to work with vocational education in technological update activities. The identified industries agreed to work with vocational educators in maintaining and upgrading teachers' occupational skills and to identify the occupations employed within each firm. Data for planning the directory was provided from 233 responses to a survey of vocational teachers. As a result, the directory is organized by vocational program areas, and four methods (approaches) have been proposed through which to upgrade and maintain occupational skills. These were the areas identified by teachers as the most preferred. In order of preference:

1. Working in industry for a short term
2. Attending industry training programs
3. Attending centrally located skill training workshops
4. Receiving literature and material that will help to individually upgrade or maintain skills.

The directory is an excellent way for vocational educators and administrators to save time in planning technological update activities. It identifies those industries that are willing to form a cooperative partnership to provide technology upgrading for vocational teachers.

It identifies occupations within each firm and the approaches that have been proposed to upgrade occupational skills. After the vocational teacher computes a needs assessment, he/she can use the directory to identify a business/industry that can provide the technological upgrade needed and at the same time select an approach that will best accomplish their objective(s).

The development of this directory was cooperatively funded by: The Appalachian Regional

Commission, Mississippi State Department of Education, Vocational and Technical division and Mississippi State University.

In 1981, Dr. Greg S. Ohanneson, Assistant Dean of Occupational Education at San Jose City College in San Jose, California, developed Updating and Upgrading Occupational Instructors, A Process Handbook. This project was funded through Vocational Education Amendments of 1976, Title II, Subpart 3(P.L. 94-482). The result was a comprehensive handbook for the establishment of a work/observation experience program. Although aimed at the updating of college vocational educators the handbook could be a useful resource for initiating a work experience update program at any level. The handbook was based on the model developed at San Jose City College.

Key items and options of the San Jose model are:

--Approximately four weeks of full time work or work observation in an industry setting related to the instructor's teaching field.

--Approximately two weeks, full time devoted to curriculum development/modification/audio-visuals/audio-visual generation; utilizing the knowledge and practical experience gained during theindustry activity.

--Supplemental salary to ensure that the instructor will "earn" an amount equal to a regular summer salary.

--Funds for development of audio visual materials and student handouts.

It was recommended that curriculum revision be product oriented and that the 60 hours of curriculum work should impinge on approximately 60 hours of classroom time (lecture and laboratory).

Participating instructors and other nonparticipants in this model tended to indicate a preference to participate as a district paid observer. This arrangement eliminates union objections where that is an issue. In addition, the paid observer role can be substituted when it might be difficult to arrange for a company paid work slot (i.e. if the time to be spent at each site is less than two weeks). Also, while in an observer role the instructor may be able to acquire more detailed familiarity with the total work of the shop. The instructor has more flexibility on the job (can observe a greater variety of tasks) and in moving from one company to another. One disadvantage of the paid observer is the relatively high drain on Vocational Education Amendment special funds (the company pays no salary). Another is the possible lack of actual work experience for the instructor.

The handbook details the above items and outlines a calendar of activities to get the project in motion. It is noted that there is a need for supplementary financial support for this work/observation update experience.

An extensive ERIC search for the years 1980 through 1985 identified only one major attempt to investigate the problem of technological update of secondary and post-secondary vocational/technical instructors. This study, by Wonacott and Hamilton (1983) was conducted for The National Center for Research on Vocational Education at The Ohio State University as part of a project on technological update. The project, "Updating Teachers for Tomorrow's Technology--A Strategy for Action." was conducted in three phases. The first phase, a status report on technological update, was summarized in the report by Hamilton, Wonacott, and Simandjuntah (1982), mentioned previously. The study of Wonacott and Hamilton (1983), which constituted the second phase of the project, reviewed the most frequently utilized approaches to technical update and identified the factors which constituted barriers and facilitators to their implementation. The third phase of the project, summarized in a document by Wonacott and Hamilton (1984), identified the essential characteristics of a strategy for technological update and provided recommedations for further action. This third document will be discussed in further detail later in this paper.

To identify the approaches most commonly used in technological update, Wonacott and Hamilton surveyed consultants from 18 states. They included both knowledgeable observers and staff members of vocational institutions and agencies, and they represented both secondary and post-secondary vocational-technical education. The data which resulted from this survey were categorized into six delivery techniques:

1. Work experience internship
2. University and college course work
3. Workshops, conferences, and seminars
4. Industry observation
5. Education and industry staff exchange
6. Part-time employment

Of these approaches, participation in workshops, conferences, and seminars were identified as the most universal delivery techniques. University/College coursework was also mentioned as a common approach. Less frequently, industry observation was mentioned as a means for the technological update. Although all three approaches were evaluated by the consultants in Wonacott and Hamilton's study as having merit, they will be mentioned only briefly in this paper as they do not incorporate some type of structured work experience. The three remaining approaches--work experience internships, education and industry staff exchange, and part-time employment--will be described in detail. Each description will incorporate the following information: the type of experiences provided to the vocational/technical instructor, the characteristics of the approach, a summary of its potential benefits and drawbacks, and a description of the factors which facilitate or inhibit implementation of the approach.

WORK EXPERIENCE INTERNSHIP

TYPE OF EXPERIENCES PROVIDED

Internship is a term that has typically been used for collegiate experiences. However, it can be and is used whenever work experience is an intergral part of the curriculum. Usually, work experience occurs after a person has completed the theory and/or course work requirements. The main purpose of the work experience internship is the development of occupational competencies by applying theory to practice. The work experience internship approach provides teachers with the opportunity to:

--work on machines and equipment to develop workplace skills and production requirements

--interact with employees to better understand their problems and concerns relative to job performance

--observe employability skills that business and industry require as a part of daily performance

--apply technical knowledge in practical job situations

--observe and identify performance and behavioral standards expected of new entry workers who are students of the teacher intern (competencies, dress, work habits, etc.)

CHARACTERISTICS

--may be planned for any length of time--typically one semester to a year (work schedule--evenings, weekends, or summer)

--Planned work experience activity to achieve specific objective(s) related to technological update

--needs assessment to identify teacher needs (assessment to be done by immediate supervisor, state supervisor, or a teacher educator or a combination of these people)

--On-the-job supervision is assigned to coordinate work experience activities

--working contract between the teachers and the employer concerning salary (if applicable) work schedule, plan of work, workman's compensation, etc.

ADVANTAGES AND DISADVANTAGES

The advantages of this approach outweigh the disadvantages (Table 2), providing the worksite is selected with care and properly supervised.

BENEFITS

--technological update (skills and knowledge) of vocational teacher.

--source for advisory committee members.

--potential for donation of surplus materials or equipment which can be donated to the school and provide tax benefits for the business/industry.

--possible awarding of college credit for meeting certification and/or college degree requirements for completing supervised occupational experience.

--input from business/industry in identifying their employment requirements.

--potential for student placement.

--instructional program improvement--equipment. update, curriculum additions and/or revisions and teacher competencies.

--reduces business and industry's training cost by providing the vocational teacher with job entry employment requirements.

EDUCATION AND INDUSTRY EXCHANGE

TYPE OF EXPERIENCES PROVIDED

The education and industry exchange program is designed to exchange work stations between the vocational education teacher (school) and the business and industry person (business/industry). However, this complete exchange between work stations did not work in Kentucky. In 1974, Kentucky funded a program entitled: Kentucky Appalachia Vocational Staff Exchange project.

The project was originally designed to assess vocational teachers' technological needs and identify businesses and industries who would be willing to exchange work sites for one to four weeks during the regular academic school year. When we assessed vocational teachers, we found that most teachers recognized their deficiencies and were willing to exchange work sites with business and industry personnel. However, when we surveyed businesses and industries in the 17 counties of Appalachia (project was funded by the ARC) we found a great majority who felt that the site exchange was just not feasible. Some of the reasons: workman's compensation laws to protect employees in case of an accident, downtime in production due to lack of continuity for short term employment, and the time to complete paper work requirements for part-time employees and evaluation requirements for the project.

Due to business and industry's reluctance to participate in the complete exchange strategy, the project was revised to allow vocational teachers to gain short-term up-to-date work experience (the project titled was not changed).

At the present time, the Staff Industry Exchange program operates on a statewide basis. From 1974 to 1985 3,200 vocational teachers in all vocational service areas have participated in the program. (This number includes teachers who have participated more than once).

The following is a breakdown of the number of participants that have been involved in the Staff Exchange program by vocational service areas in Kentucky for 1976-1985.

Vocational Industrial Education (T&I)	1,403

Business and office		536
Marketing & Distributive Education		262
Home Economics		202
Health & Personal Services		193
Agribusiness		44
Special Vocational Programs		39
Public Service		39
Related Vocational Teachers		35
	TOTAL	2,753

NOTE: This tally includes vocational teachers who have participated more than once in the staff exchange program.

The Staff Exchange program provides a communication link between vocational educators and business and industry. Vocational education is concerned with properly training or retraining people for job entry skills, knowledge and attitudes required by business and industry. Business and industry is concerned with the recruitment, selection and employment for qualified workers. The Staff Exchange program is the vehicle that provides vocational educators an opportunity to keep abreast of the technological advances and employability skills currently required.

The Staff Industry Exchange program is divided into five major operational phases. The following sequential activities are stated as tasks for the participant to follow:

PHASE I

Getting Involved in Staff Exchange

1. Complete a needs assessment plan for

professional and technical development (immediate supervisor and/or field based teacher educator will assist in the needs assessment).

2. Identify and prioritize improvement needs.

3. Write specific objectives for technical update (based on identified needs) through work experience activites.

PHASE II

Application for Staff Exchange

1. Locate a business or industry that will agree to provide work experience to meet identified objectives (A B/I supervisor should be identified who will supervise the educator).

2. Plan work schedule (include application for extended employment during summer).

3. Get training agreement signed by training sponsor.

4. Request approval for out-of-region travel, if applicable.

5. Contact college advisor if college credit is desired for staff exchange.

PHASE III

Staff Exchange Work Experience Schedule

Activities on the first day might include some of the following:

1. review application/work agreement details, such as:

-Objectives of work experience

-Daily schedule of activities

-Inform supervisor(s) that your immediate superior will be visiting you on-the-job. Also that a teacher educator will be visiting you (if college credit is being granted)

-Workman's compensation (liability coverage)

-Evaluation forms to be completed

-Business/industry policies, procedures and organizational structures

-Employment opportunities for new employees

-Jobs available for employment

-Tour B/I to gain overall understanding of its operation

After a basic orientation, the next step is to observe, assist, or perform work activities identified by supervisor. Participants in the Staff Exchange program are expected to fulfill the obligations of the work agreement and other rules or policies of the employer. Furthermore, an outline of daily work activities and evaluation of work site must be completed.

On the last day of work experience, a meeting should be organized to discuss work experiences accomplished. Such topics as:

-Review objectives that were achieved through staff exchange

-Teacher discuss accomplishments and how they will be incorporated into institutional program

-Invite the B/I supervisors to exchange or visit the vocational school for the possibility of:

--Talking to students concerning employment requirements in business/industry

--assisting in teaching and/or administrative function

--serving on advisory committees

--providing input concerning program/curriculum design or equipment/facilities

--acting as a resource person--demonstrator, speaker, judge, evaluator, etc.

--substitute teacher (those that would qualify).

-- Personally thank B/I for opportunity to work with them. Follow-up Staff Exchange by mailing a letter of appreciation to the host business/industry.

PHASE IV

Staff Exchange Outcomes

The single most important outcome of staff ex change must be to incorporate work experience learnings into the instructional program. The immediate supervisor and the field-based teacher-educator should be available to assist in planning these changes. It should be noted that teachers who participate in one to four weeks of staff exchange, are also granted an additional week to implement the work experience into their instructional program. It has been noted by the author that teachers who receive college credit are more likely to implement update changes than those who do not receive college credit. The following are specific tasks that should be completed to improve the instructional program:

--Identify staff exchange work experience activities that provide an opportunity to achieve objectives.

Consider:

--Skills or knowledge that need to be revised or incorporated into lesson plans or modules

--Equipment that needs to be replaced or added to program

--Visual aids that need to be developed or ordered to support instructional and/or administrative improvements

--Personal development through training, retraining or inservice workshops that would improve competencies of a teacher

--Occupational skills or knowledge

--Professional teaching skills.

PHASE V

Evaluation Results of Self-Assessment

The professional development plan is designed to document your professional and technical accomplishments and plan activities that will help in meeting professional and technical goals.

Review and update the self-assessment plan (1 to to 5 year plan) for professional and technical development based on the Staff Exchange experience.

Consider:

--Work experience earned in specific occupation areas

--Certification status

--Technical and occupational area of concentration needs for further update activities.

The Staff Exchange program's main purpose is to improve the quality of vocational education to better meet the needs of students and the businesses and industries we serve.

ADVANTAGES AND DISADVANTAGES

The advantages and disadvantages of the Staff Exchange program are dependent on the quality of administration and supervision. (See Table 2)

BENEFITS

--Business/industry person will become aware of some of the constraints of vocational education

--Improve the image of vocational education within the community

--Potential advisory committee members

--Input from business/industry person on how to better organize and manage classroom and laboratory activities

--potential for student placement.

PART-TIME EMPLOYMENT

TYPE OF EXPERIENCE PROVIDED

Part-time employment refers to employment in a business or industry after school hours, on Saturdays and/or during summer months. It's also inferred that the part-time employment is in the occupation being taught. Part-time employment is generally production oriented rather than training oriented. Part-time employment is only as good as the opportunities provided in the job. Many times, employers will not invest their time or money in training part-time employees. At the same time, on-the-job training (O.J.T.) provides the teacher with opportunities to practice the basic skills required in the occupation.

CHARACTERISTICS

--Employment may be evening, Saturday or during the summer months

--There may be a lack of on-the-job supervision to coordinate work experience activities

--Care in selection of part-time employment is critical if it is going to provide technological update activities

--Job should be selected based on training rather than the financial benefit

--Part-time employment may interfere or take time away from doing a quality job of teaching.

ADVANTAGES AND DISADVANTAGES (See Table 2)

It is possible that the characteristics of part-time employment can lead to more disadvantages than advantages (See table 3). Care should be taken in supervision and evaluation of objectives to insure that this does not occur.

BENEFITS

--Potential for student employment

--Technological update of skills and knowledge within the occupation

--Potential for donation of surplus materials or equipment which can be donated to the school and provide tax benefits for the business/industry

--Communication link between school and employer

--Instructional program improvement--equipment update, curriculum additions and/or revisions

--Source of advisory committee members.

A fourth approach, industry training workshops or sometimes called factory training schools, will be mentioned here even though it is not, strictly speaking, a "structured work experience". This approach, used widely in the automobile industry, was identified by Michigan, Indiana, North Carolina, Ohio, Mississippi and Oregon as one they commonly use. Michigan calls this the "hitchhike" approach. A full time staff at Michigan State University identifies workshops that are being planned and organized by business and industry personnel. If slots are available, they farm out their teachers to attend these updating activities. The workshops are relevant and current with what business and industry want their employees to know and be able to do.

Industry sponsored workshops are conducted by all the major businesses and industries throughout the United States. They have no choice in conducting these workshops if they are going to keep their employees abreast of the recent technological developments. Business and industry selects their most competent employees and/or supervisors and uses them to train their employees. They also hire technical experts outside their industry to train their personnel. Most large businesses and industries spend a great deal of money each year in the training and retraining of their personnel because of technological advances.

These industry training workshops may be for one day or they may be scheduled throughout the year. They may operate during the regular work day or they may be scheduled evenings or Saturdays. Business and industry have a vested interest in helping improve the quality of vocational education and are more than willing to permit vocational teachers to attend their technological update workshop activities. Teachers usually can attend these workshops at very little cost, or no cost at all, if training slots are available. The industry sponsored workshop approach provides teachers with the opportunity to:

--Apply technology along with hands-on experience that simulate actual on-the-job activities

--Receive state of the art instruction and demonstrations using the latest tools, materials, and equipment

--Observe teaching practices that incorporate the latest in instructional aids--models, mock-up, simulation techniques, transparencies, etc.

CHARACTERISTICS

--May be planned for any length of time--typically short term session (10 to 40 clock hours). During summer months many industry training workshops are scheduled for one week

--Planned workshop to accomplish very specific objectives

--Usually technical update workshops are scheduled six months to one year in advance

--Workshop fees are generally reasonable in cost (travel, meals, and lodging are participant's responsibility)

--Workshop activities should be scheduled well in advance (paid employees have first priority)

--Business/industry training personnel may plan and conduct technological workshops only for vocational teachers. (In this case, his/her salary would be the only cost).

BENEFITS

--Communication link between school and employer

--State of the art training

--Programmed learning experience rather than a production experience

--Intensified learning experience (planned and organized training)

--College credit may be earned

--Source of up-to-date instructional supplies (transparencies, charts, etc.)

--Observe teaching techniques in delivering technological update

--Source of advisory committee members

--Interact with employees to better understand their training needs.

SETTING UP A PROGRAM OF TECHNOLOGICAL UPDATE

Whether a technological program is planned for a specific school, a local school district or on a statewide basis, a total commitment must be made from the top administrator down to the local administrator. Also, state department officials and teacher education staff must be involved in all aspects of planning, organization and implementation of such projects.

The following are suggestions that should be considered for local, state and federal officials in planning, implementing, and follow-up of a technological update project:

1. Organize an advisory committee (example from Kentucky's Staff Exchange is in Appendix B) to serve in an advisory capacity for planning, implementing, conducting, and evaluating the technological project or program. The people who serve on this committee should be representative of all the vocational service areas involved.

2. Identify procedures, duties and responsibilities for each person involved in the project (See appendix B for examples from Kentucky's Staff Exchange program). This must be done if all parties involved are able to understand and carry out their responsibilities.

PLANNING PHASE

* A project director and staff must be identified and/or hired to coordinate the project.

The project director should conduct the following activities during the planning phase of the project:

1. Orient educators and the business/industry community to the purpose and procedure of the technological update project.

2. Survey the teachers to determine their interest in participating in the project.

3. Survey the business and industrial community to determine their interest in participating in the project.

4. Establish the project advisory committee.

5.VISIT INDIVIDUAL TEACHERS TO EXPLAIN THE

PROJECT AND ANSWER QUESTIONS CONCERNING THEIR SPECIFIC PROBLEMS AND CONCERNS.

6. VISIT BUSINESSES AND INDUSTRIES THAT ARE WILLING TO PARTICIPATE FOR THE PURPOSE OF EXPLAINING THE PROJECT AND ANSWER THEIR QUESTIONS AND CONCERNS.

7. Develop appropriate forms to coordinate technological update activities. Such forms might be (See Appendix B):

--Application and work agreement

--Work site evaluation

--Educator's daily activity and evaluation sheet

--Business and industry evaluation and time sheet

--If appropriate, complete requirement for earning college credit for technological update.

OPERATIONAL PHASE

1. Educator submits application which includes objectives, work agreement and proposed host business/industry

2. Objectives and worksites are approved (or not) by the project director and/or the immediate supervisor

3. If approved, the educator goes to work as scheduled

4. Educator is visited and evaluated by his/her immediate supervisor while on-the-job (determine if objectives are being accomplished)

5. Educator is visited and evaluated on-the-job by the teacher educator if college credit is being granted.

FOLLOW-UP PHASE

After the technological activity has been completed, the teacher's self assessment plan should be evaluated and updated. The immediate supervisor and/or teacher educator can assist the participant in identifying the accomplishments of the work experiences.

IMPORTANT:

The single most important element of technological update is to incorporate work experience update into the vocational program. The immediate supervisor should help guide these changes. Program changes should be done as soon as possible after the work experience activity has been completed. These changes may involve the addition of lesson plans/modules, the revision of existing lesson plans/modules, instructional aids, addition of tools, material equipment, etc. Unless technological update outcomes are incorporated into the instructional program, the program will not change and improve. The main purpose of technological update is to improve the quality of instruction to better meet the needs of students and the businesses and industries we serve. To insure that this stage is being carried out, some states build it into their program as 1 to 2 weeks following the technological update experience. The educator is salaried for this time to develop the appropriate instructional materials.

EFFECTS ON INSTRUCTIONAL IMPROVEMENT THROUGH TECHNOLOGICAL UPDATING

Has the process of technological updating been successful? Currently, the information available to answer this question is largely anecdotal. The few studies available are generally limited to a single state and a single approach. One such study was McElroy's (1981) Impact Study on Kentucky's Staff Industry Exchange program. This study included a survey of 456 vocational teachers who had been involved in the statewide program for over six years. Among the questions it attempted to answer were the following:

1. What was the teacher's major objective for participating in technological updating?

2. What changes, if any, in vocational instructional methods, curriculum content, instructional procedure, instructional management procedure, interpersonal relationship, and personal/professional development took place as a result of the Staff Exchange program?

In response to the first question, more than half (53.8%) of the teachers surveyed indicated that their main objective for technological update was to improve skills and knowledge within their occupational area. The second most mentioned objective (21.5%) was to increase knowledge of the employability standards in the occupations for which the teachers were preparing students. Fewer than 8 percent of the responses were related directly to curriculum revision. However, all of the responses were at least indirectly related to course content, teaching, methodology, or classroom/laboratory management techniques.

In response to the second question, the teachers who were interviewed indicated that the Staff Exchange experience had a positive effect on vocational instructional methods. At least half (52.8%) of the teachers felt that:

(1) the selection and/or preparation of instructional materials was better,

(2) the ratio of group to individual instruction had changed in a positive direction,

(3) more simulation techniques were being used,

and

(4) the ratio of lab/shop activities to classroom activities had changed in a positive direction.

Perceptions of the impact of the Staff Exchange experience on the content of the vocational curriculum were also assessed. The teachers felt that the experience had caused them to change the curriculum in the following ways:

(1) the emphasis on basic skill development

versus specialized skill development had changed (chiefly to emphasize specialized skill development more or to achieve a better balance between the two),

(2) there was much more emphasis on the identification and use of up-to-date equipment and,

(3) the emphasis on speed development versus accuracy development had changed (chiefly to place more emphasis on accuracy or to develop a better balance between the two).

The effect of the Staff Exchange experience on evaluation procedures was less pronounced. Fewer than half (43.2%) of the teachers had changed performance standards for manipulative skills as a result of their participation in the Staff Exchange Program. Just over one-half (50.9%) of the teachers had changed performance standards for technical and related knowledge areas. A majority of the teachers had developed or revised performance objectives after the Staff Exchange experience. However, over one-fourth (25.3) of the teachers had either developed no objectives or had not revised previously-developed objectives.

The participants perceived their Staff Exchange experience as having a positive impact on their personal and professional development. Over 80.0 percent had developed new occupational skills; over 90.0 percent had developed new areas of occupational knowledge; over 85.0 percent had learned about new types of and/or uses of materials, tools, and equipment. The perceived increase in occupational skills and knowledge _is_ important since that was the objective mentioned most often by the teachers when they were asked to list their major objectives for participating in the Staff Exchange Program.

In summary, vocational teachers who were involved in the Staff Industry Exchange program (technological update) from 1974 to 1980 perceived that the most important outcome they received was the development of occupational knowledge and skills. Based on this and on the Hamilton and Wonacott study, (1984), the work experience approach is an effective approach to skill and knowledge development.

SUMMARY-CONCLUSIONS-RECOMMENDATIONS

This research paper investigated various strategies that states are using to facilitate vocational educators in staying current with the skills, knowledge, and employability skills, required and expected in the business and industrial world.

Technological update refers to the process of keeping vocational teachers current with occupational skills, knowledge, and employability skills required in the workplace in which people are being employed.

The process of keeping up-to-date involves four steps: identify the need, develop a plan of action, implement the plan of action, and evaluate the plan.

The six approaches that were identified as reflecting what most states are doing to update their teachers were:

--Work experience internships

--University and college course work

--Workshops, conferences, and seminars

--Industry observation

--Education and industry staff exchange

--Part-time employment

SYNOPSES OF MAJOR APPROACHES

Previous project work by Hamilton, Wonacott, and Simandjuntah (1982) identified these approaches from a review of literature and a solicitation of program descriptions from selected secondary and post-secondary programs.

These six approaches are being implemented in programs administered by different agencies, ranging from an individual school, institution, or district to a state department of education. In contacting fourteen states by phone, it appears that most states use a combination of all six models.

Workshops, conferences, and seminars were found to be the most universally used approach to teacher update. This was true for both secondary and post-secondary teachers.

A panel of experts indicated that university/college course work, part-time employment (due to certification and recertification requirements), were used in approximately one-half of the states that were included in the Hamilton, Wonacott and Simanjuntah study. Business/industry exchange programs and visits to business/industry were reported as being in use in approximately one-third of the states included in the study. Utilization of the various approaches varied considerably among different occupational service areas within various states.

The panel also agreed that it would not be appropriate to develop one single formula to be applied unfailingly in every technological update program. No single formula could hope to account for all the differences in the detail and situation of secondary and post-secondary programs across the United States.

Hamilton and Wonacott, 1984 report, developed a chart (Table 1) on the various approaches and rated these six approaches according to individual criteria of adaptability, acceptability, effectiveness, and efficiency. The rating may not apply to every local situation, however, this rating chart can help planners to verify the criteria in light of their local situation. The ratings in Table 1 can be taken as a starting point in planning technological activities for teachers.

An analysis of the information reviewed in this study led to the identification of advantages and disadvantages of each approach. Advantages and disadvantages center on the nature of instruction available through the approach for technological update.

Table 3 outlines the advantages and disadvantages of each of the six approaches that have been identified.

The National Center for Research in Vocational Education assembled a panel of experts that identified nine essential characteristics for structuring technological update programs (Hamilton and Wonacott, 1984, p. 6):

1. *Organization and structure for action*--logical sequence of steps to follow in designing and carrying out technology update program or activities

2. *Roles and responsibilities* of all individuals involved should be spelled out

3. *Policy statements* to support the roles and responsibilities of those involved

4. *Resources* necessary and available to teachers for participating in activities to gain technological update

5. *Incentives and rewards* to motivate participants

6. *Variety of approaches* (techniques) by which teachers can gain technological updating

7. *Alternative and creative* techniques that best meet the individual's needs for technological update

8. *Knowledge and skills* gained in update activities *are incorporated into the instructional program* or course material

9. *Continuing and self-renewing activities* to technological update.

These nine steps can be used with one approach or a combination of approaches. They can be used for one teacher, a local program or a state operated program for technological update. However, if these steps are to result in a strategy that changes the way vocational courses are taught, they must emphasize two essential ingredients:

1. Supervisory involvement

2. Teacher participation in the process of planning and evaluating his/her experiences in technological updating.

Even though vocational education reported considerable success in using one or more approaches to update teachers the fact remains that vocational teachers as a whole are not staying up-to-date with the fast changing technologies within their occupations. the reason for this lack of technological update may lie in one or more of the barriers to change identified previously by Hamilton, Wonacott, and Simandjuntah (1982) and Wonacott and Hamilton (1984).

These barriers to successful technological update can be classified into three main categories:

1. Unavailability of Resources

--Time, money, links with external organizations, equipment, and expertise

2. Lack of Awareness of need (motivation)

--Administrators, teachers, and business/industry

3. Lack of Planning (policy)

--Teacher and administrator.

These barriers appear to be common for all approaches that may be used for technological update.

If these barriers are to be removed, they must be attacked at the local, state, and national level in a joint effort by vocational/technical instructors, local school administrators, and state and federal vocational officials as well as business/industry.

McElroy's study identified the lack of administrator involvement as a major barrier to effective teacher participation in the program. As a result of his study, the Kentucky Staff Exchange Program was revised to involve the immediate supervisor (principal) in all aspects of technological update -- assessment of technological needs, identification of technological objectives and worksite for staff exchange, on site visit evaluation, and follow-up activities regarding the implementation of technological update experiences within the instructional program.

There must be a significant effort to make administrators, teachers, and business/industry representatives aware of the need for technological update and to motivate them to support the efforts necessary to promote technological updating. The bottom line is:

--Someone has to pay for the program

--The teacher must be willing to participate

--Administrative policy must support the update activity

--Update must be cost effective (in dollars, time, and energy).

The immediate supervisor (principal) can assist the teacher in overcoming obstacles which might hinder or discourage him/her from becoming involved in the technological update process. If any program of technological update is going to be successful, the administration must be committed and directly involved in helping and encouraging the teacher's participation in the updating activities.

Participation in the process of technological updating by the individual teacher involves four basic steps:

1. Identify the need -- if a teacher's technology update is to be successful, the teacher must see the need and it must be relevant with what the teacher is

doing in the classroom/laboratory. This needs assessment plan for professional development should involve the teacher, the immediate supervisor and a teacher educator. The teacher as the key stockholder is the key to successful, effective vocational education programs. In order to maintain and improve the quality of instruction, it is important for vocational educators to periodically assess their own and their staff's strengths and weaknesses.

2. Develop a Plan of Action -- This plan of action should identify the specific objectives, skills, knowledges of theory and production practices and equipment that the teacher needs to bring him/her up-to-date. The plan of action should also include the types of approaches (workshop, seminar, college course, work experiences, etc.) needed for technical update improvement.

3. Implement the Plan of Action -- This is a very important step in which teachers will participate in activities that have been identified on their plans as relevant to their own individual needs for updating.

4. Evaluate and integrate the Plan -- Even with careful planning, the technical update activity may not neet the teacher identified needs. It is important that the teacher evaluate the effectiveness of this effort. If the update activity meets his/her objective for technical update, then the new technology should be integrated within the instructional program. Time and resources should be made available for the teacher to integrate the updated technology into his/her instructional program.

These observations are worth reviewing on final analysis of the data gathered for this paper:

--Availability of funding and motivation are cited as the two most common barriers to all approaches to technological update

--Roles and responsibilities of various agents involved in the process of technological update must be defined

--One-third of all secondary teachers are considered in need of update

--One-half of all post-secondary teachers are considered in need of update

--Technological update opportunities should exist for all vocational service areas at both the secondary and post-secondary levels

--A variety of approaches to teacher technological update are used by each state with workshops, conferences, and seminars being the most commonly used

--Technological update is being used by most states, however, teachers still remain in need of updating in the technology that they teach.

RECOMMENDATIONS IN PLANNING TECHNOLOGICAL UPDATE ACTIVITIES

Based on the findings and conclusions of this paper regarding the problems and concerns of technological update, the following recommendations are made:

--An overall program of technological update should be planned, organized, and implemented in each state to provide teachers with the time and resources for technological update

--A staff position within the Department of Education should be assigned for the specific responsibility for staff development in the area of technological updating

--An advisory committee to help in planning and implementing technological update project activities should be organized

--Technological update projects are not feasible unless additional funding is made available. Plans for acquiring additional funds need to be developed

--Guidelines should be developed that utilize various approaches to technological update. These

--Guidelines should be developed that utilize various approaches to technological update. These guidelines should be flexible to meet the needs of the teachers

--Technological update should be made an integral part of the teacher's professional development plan

--Rewards and incentives should be a part of the technological program to motivate teachers to want to get involved. Incentives for teacher might include: college and/or certification credit, substitute teachers made available, travel reinbursement, etc.

--In-service workshops should be planned on a statewide basis to communicate the need for technological update and the many advantages to the teachers, the students, and industry. Contact with teachers and industries to answer questions on their concerns in invaluable

--Technological update should involve hands on experience if what we say is true in vocational education - that we learn by doing. Short term lecture activities are not as effective for technological update

--If possible, work experiences activities should be at least two weeks in length. Short term activities are not as effective in skill development, especially if the teacher has little or no experience in the skill

--A technological needs assessment should be conducted with each teacher to determine areas of strength and weakness within the occupation being taught

--Specific objectives should be identified that can realistically be accomplished during the time alloted for technological work experience to take place

--Structured work experience sites should be approved by the project director and/or immediate supervisor

--Some type of an agreement or contract should be written, if the teacher is going to work in industry, so that the teacher, the school, and the employer understand their responsibilities in fulfilling their technological update activity

--Travel, meals, lodging, etc. (if applicable) should be reimbursed for technological update activity

--Some type of on-site evaluation should be conducted while the teacher is on-the-job. The on-site evaluation lets the employer know that this update activity is important. It also will influence the on-the-job supervisor to provide the educator with work activities to meet the identified work experience objective

--Follow-up evaluation should be carried out to insure the teacher is using this experience to improve the Vocational program.

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APPENDIX A

TELEPHONE INTERVIEWS

California State Dept. of Education 721 Capitol Mall Sacramento, CA 95814	Al Metzler
Florida State Dept. of Education Tallahassee, FL. 32301	Pal Rushing
Illinois State Dept. of Education Springfield, IL 62777	Norma Denton
Indiana State Dept. of Education 229 State House Indianapolis, IN 46204	Montee Janik
Iowa State Dept. of Education Grimes State Office Building Des Moines, IA 50319	Ron Jarchow
Kentucky State Dept. of Education Frankfort, KY 40601	Ron Baugh
Maryland State Dept. of Education 200 W. Baltimore St. Baltimore, MD 21222	James Richter
Michigan Michigan State University East Lansing, MI 48824	George Ferns
Missouri State Dept. of Education Jefferson City, MO 65102	Judy Perryman
New York State Dept. of Education 99 Washington Ave. Albany, NY 12234	Lee Traver
North Carolina State Dept. of Education Raleigh, NC 27611	Ken Thigton

Ohio
State Dept. of Education
Ohio Dept. Building
Columbus, OH 43215
James Wiblin

Oklahoma
State Dept. of Education
1515 W. 5th Avenue
Stillwater, OK 74074
James Sharpton

South Carolina
State Dept. of Education
Columbia, SC 29201
Charles Moore

APPENDIX B

Responsibilities of Staff Exchange Program Director

Tasks and Activities to be Conducted by the Educator (Participant)

Tasks and Activities to be Conducted by the Business/Industry Sponsors

Tasks and Activities to be Conducted by the Immediate Supervisor

Tasks and Activities to be Conducted by the Teacher Educator

Staff Exchange Advisory Committee

Vocational Education Personnel Development

Staff/Industry Exchange Application

RESPONSIBILITIES OF STAFF EXCHANGE PROGRAM DIRECTOR

The Staff Exchange Director is responsible for program planning, implementation and evaluation. He/she is responsible for the coordination and dissemination of all materials, forms and brochures relative to staff exchange. He/she is responsible for developing and monitoring the budget. He/she also plans all inservice and Staff Exchange Advisory Committee meetings and annual conferences.

The specific tasks of the program director are:

1. Informs all educators and business and industry personnel about the Staff Exchange Program.
2. Directs activities of teacher educators.
3. Directs activities of regional contact personnel.
4. Develops a workable budget.
5. Coordinates and monitors budget.
6. Revises materials, audio-visual aids, and forms relative to staff exchange.
7. Plans advisory committee meetings.
8. Plans annual conference/conferences.
9. Evaluates staff exchange activities each year.
10. Coordinates and conducts inservice for immediate supervisors.

TASKS AND ACTIVITIES TO BE CONDUCTED BY THE EDUCATOR (PARTICIPANT)

Every vocational educator having teaching responsibilities needs to return to business/industry on a regular basis to keep up-to-date with new skills, knowledge, and attitudes of business industry. It is the responsibility of each educator to identify their professional and technical competencies through a needs assessment.

This self assessment can best be accomplished through a conference with the teacher educator (advisor) and your immediate supervisor (department head, coordinator, or principal) at your school.

1. This self assessment should identify your professional and technical goals and objectives for a one (1) to five (5) year plan for professional development.
2. Once your goals and objectives have been identified; relating to your teaching, you should then sequence those professional and technical needs (according to priority).

The following are steps to follow in participating in the Staff Exchange Program:

1. Complete a self assessment.
2. Identify specific objectives for instructional improvement through work experience.
3. Work with immediate supervisor in making application for Staff Exchange.
4. Report to work as scheduled.

   NOTE: You will be visited on-the-job by your immediate supervisor and/or a teacher educator if college credit is being granted.
5. Complete necessary forms.
   - Time and Daily Activity Sheet
   - Evaluation (on-the-job)
6. Implement Staff Exchange work experience into instructional program.
7. Document results and achievements of Staff Exchange experience.
8. Update self assessment plan (1-5 year)

TASKS AND ACTIVITIES TO BE CONDUCTED BY THE BUSINESS/INDUSTRY SPONSORS

Business and industry is concerned with the recruitment, selection, employment, and training of qualified workers. The Staff Exchange Program provides business/industry an opportunity to work with vocational educators in keeping them up-to-date with business/industry needs for employment. Working together provides better communication links between the vocational programs and the business and industries which employ the graduates of the program.

The following are some of the specific task responsibilities of the business and industry sponsors.

1. Sign work agreement and agree to provide work experience activities to meet participant's objectives.
2. Evaluate participant.
3. Verify the participant's time and activity sheet.
4. To become involved in vocational education activities to the extent possible.
5. To permit the immediate supervisor and/or teacher educator to visit and evaluate the participant on-the-job.

TASKS AND ACTIVITIES TO BE CONDUCTED BY THE IMMEDIATE SUPERVISOR

The immediate supervisor has the responsibility to work with teachers and supporting services personnel in development and implementation of a one and five year professional development plan. Also coordinate, supervise and evaluate supervised work experience activities for Staff Exchange; and provide guidance and direction in helping educators to implement their instructional activities.

The immediate supervisor will assist each educator (under their direct supervision) in carrying out the following duties and responsibilities to meet the objectives of the Staff Exchange Program:

1. Develop a self assessment of work experience.
2. Identify work experience objectives.
3. Develop extended employment plan.
4. Plan work schedule.
5. Identify work site for Staff Exchange.
6. Secure approvals (signatures) for application/work agreement submitted for Staff Exchange.
7. Provide an orientation to business/industry sponsors concerning the objectives on the Staff Exchange Program to identify their role in supervising the Staff Exchange participant.
8. Visit and evaluate applicant during work experience.
9. Guide and direct the implementation of work experience into the instructional program.
10. Submit results of Staff Exchange work experience objectives that have been implemented.
11. Assist educator in updating 1-5 year self assessment plan.

TASKS AND ACTIVITIES TO BE CONDUCTED BY THE TEACHER EDUCATOR

The teacher educator and/or field based teacher educator shall assist in developing self assessment for vocational educators in regions agreed upon; identify specific objectives for instructional improvement through work experience; and provide guidance and direction in helping Staff Exchange participants implement their work experience into their instructional program.

The teacher educator will assist each Staff Exchange participant (regions assigned) in carrying out the following duties and responsibilities to meet the objectives of the Staff Exchange Program:

1. Work with the immediate supervisor and educator in developing a self assessment for professional development (1-5 year plan).
2. Identify specific objectives for instructional improvement through work experience.
3. Inform vocational educators and/or administrators concerning college credit requirements for Staff Exchange work experience.
4. Visit and evaluate only those participants receiving college credit for Staff Exchange work experience.
5. Assist immediate supervisor on request to visit and evaluate Staff Exchange work experience.
6. Provide assistance in helping Staff Exchange participants implement work experience objectives into their instructional program.
7. Assist in reviewing 1-5 year professional development plans to update work experience objectives.
8. Coordinate all Staff Exchange activities with state, regional, and local personnel as well as other teacher educators when necessary.

STAFF EXCHANGE ADVISORY COMMITTEE

It is recommended that a Staff Exchange Advisory Committee be formed during the planning phase of the project. The advisory committee serves in an advisory capacity for planning, implementing, conducting, and evaluating the project. More specifically, the advisory committee assists in:

1. Gaining the cooperation of businesses and industries for providing work experiences.
2. Encouraging representatives of business and industry to seek meaningful experiences in the vocational-technical education setting.
3. Serving as resource personnel and advisory consultants.
4. Reviewing detailed project plans.
5. Reviewing the internal and external evaluation plans.
6. Reviewing formative evaluation findings and making suggestions to the project staff for implementing and/or improving project operations.

The advisory committee members for the Staff Exchange Program were selected to represent the following areas:

1. Manufacturing
2. Construction
3. Agriculture and Natural Resources
4. Business and Office or Distribution and Marketing
5. Public Services
6. Home Economics and Consumer Related Areas
7. Health
8. Institutions of Higher Education with Program of Vocational Teacher Education

VOCATIONAL EDUCATION PERSONNEL DEVELOPMENT

ASSESSMENT AND PLANNING WORKSHEET

NAME ______________________ DATE ____________

ADDRESS ______________________ SCHOOL ____________

______________________ REGION ____________

PHONE ______________________ PHONE ____________

PRESENT POSITION ______________________

INITIAL DATE OF EMPLOYMENT (MO.) ______ (YR.) ______

PROGRAM AREA ______________________

WORK EXPERIENCE

- YEARS OF WORK EXPERIENCE DIRECTLY RELATED TO THE COURSES YOU ARE CURRENTLY TEACHING ________ (YEARS)
- MONTHS OF WORK EXPERIENCE COMPLETED DURING THE PAST 5 YEARS ________ (MONTHS)

EDUCATION	(DATE)	(INSTITUTION)	(MAJOR)
- HIGH SCHOOL/GED			
- VOCATIONAL DIPLOMA			
- ASSOCIATE'S DEGREE			
- BACHELOR'S DEGREE			
- MASTER'S DEGREE			
- MASTER'S +			

ARE YOU CURRENTLY WORKING TOWARD A DEGREE? ____________
IF SO, WHICH DEGREE? ________ AND WHICH UNIVERSITY? ________

CERTIFICATION

	(CHECK ONE)	(EXPIRATION DATE)
- ONE YEAR VOCATIONAL TEACHING		
- FIVE YEAR VOCATIONAL TEACHING		
- TEN YEAR VOCATIONAL TEACHING		
- ONE YEAR TEMPORARY TEACHING		
- PROVISIONAL HIGH SCHOOL		
- ADMINISTRATIVE		
- OTHER		

ARE YOU CURRENTLY WORKING TOWARD A CERTIFICATE? YES _____ NO _____

IF SO, WHICH CERTIFICATE ______________________

VOCATIONAL EDUCATION
PERSONNEL DEVELOPMENT

	PROFESSIONAL DEVELOPMENT NEEDS	CERTIFICATION AND/OR DEGREE REQUIREMENTS			
	LIST IDENTIFIED NEEDS	COURSES COMPLETED & REMAINING	CR.	UNIV	APP.
PROFESSIONAL EDUCATION					
AREA OF CONCENTRATION					
GENERAL EDUCATION					

STAFF/INDUSTRY EXCHANGE APPLICATION
Kentucky Department of Education
Bureau of Vocational Education

Name____________________ Date____________ Soc. Sec. No.__________

School____________________ Vocational Region__________ Age________ Sex________

School/Work Address____________________ Zip Code__________ Phone__________

Home Address____________________ Zip Code__________ Phone__________

Do you wish college credit?______ Yes ______ No. If yes, what university?__________

Subject Area Taught____________________ No. of years__________

Administrative Area____________________ No. of years__________

PREVIOUS WORK EXPERIENCE (Non-Teaching):

Name of Company	Location	Dates

STAFF EXCHANGE WORK EXPERIENCE OBJECTIVES (Outline Objectives)

____

____

BUSINESS/INDUSTRY WHERE ABOVE OBJECTIVES CAN BE ACHIEVED:__________

Industry Address____________________

Industry Contact Person____________________ Title__________ Phone__________

Industry, On-Job Supervisor____________________ Title__________ Phone__________

DATES OF EXCHANGE: Begin______ Month ______ Day ______ Year End______ Month ______ Day ______ Year

DAILY TIME SCHEDULE:__________ From-Hour __________ To-Hour ______ M T W T F S

Will you have student responsibilities during this time?______ Yes ______ No.

If yes, who will cover your class?____________________

When applicable, has extended employment been approved to cover the S/E period?______ Yes ______ No.

Number of previous staff exchanges:__________ List of names of Sponsors: 1.__________

2.__________ 3.__________ 4.__________

COMPLETE BELOW ESTIMATES BASED ON STATE TRAVEL REGULATIONS:

Substitute Teacher cost for______ days X $ ______ per day = __________

Distance to exchange site from work site______ X ______ cents per mile X ______ days = __________

Additional in vicinity miles______ X ______ cents per mile X ______ days = __________

Lodging: ______ days at $ ______ per day = __________

Meals: ______ days at $ ______ per day = __________

Tolls, Parking and Misc.: ______ per day for ______ days = __________

TOTAL COST __________

— PLEASE COMPLETE AND SIGN OTHER SIDE —

STAFF EXCHANGE WORK AGREEMENT

The cooperating firm agrees:

To provide the educator with opportunities to reach Work Experience Objectives outlines on application.

To make an honest appraisal of the educator's performance on the job at the end of the specific period agreed upon. (Complete Evaluation form, verify Work Activities and Time Form.)

To avoid subjecting the educator to unnecessary or unusual hazards.

To notify the next of kin and school in case of accident, sickness, or any other serious problem which arises.

To permit and expect the immediate supervisor or teacher educator to confer with the educator for a reasonable time period on a supervisory visit to the business.

To notify immediate supervisor when there is a change in schedule.

SIGNATURE: ______________________ Date ____________
Business/Industry Supervisor

The educator agrees:

To keep the employer's interest in mind and to be punctual, dependable, and loyal.

To follow instructions, avoid unsafe acts, and be alert to unsafe conditions.

To be courteous and considerate of the employer, co-workers, and others.

To inform industrial contact person, regional contact person, teacher educator, and immediate supervisor of any work schedule changes; that vocational education personnel will be paid by vocational education or local education agency, and will receive no compensation from participating business/industry.

To verify his/her status for regular health, life, and workman's compensation insurance prior to exchange. To complete evaluation forms and incorporate work experience into instructional program.

SIGNATURE: ______________________ Date ____________
Educator

Please identify the location of the street, road, or highway where you are planning staff exchange work experiences.

MAP

Briefly describe how to get to B/I location.

PARTICIPATION IN THE STAFF/INDUSTRY EXCHANGE PROGRAM IS APPROVED BASED ON 1-5 YEAR ASSESSMENT AND SPECIFIC OBJECTIVES IDENTIFIED:

PARTICIPANT ______________________________ Date ____________

IMMEDIATE SUPERVISOR ______________________________ Date ____________

RESPONSIBLE SUPERVISORY OFFICER ______________________________ Date ____________
(Principal, Coordinator, Superintendent, etc.)

VOCATIONAL EDUCATION REGIONAL DIRECTOR ______________________________ Date ____________

BUSINESS/INDUSTRY CONTACT PERSON ______________________________ Date ____________

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STATEWIDE SYSTEMS OF VOCATIONAL TEACHER EDUCATION TO MEET THE CHALLENGES OF CHANGING TECHNOLOGY

by
Darrell L. Parks
and
Gail H. Henderson

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on
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PREFACE

The purpose of this paper is to propose a systems approach to vocational teacher education. In achieving this end, consideration will be given to antecedents to present-day vocational teacher education, an assessment of current state-of-the-art practices, and recommendations for appropriate philosophical and structural considerations that are supportive of a comprehensive statewide system. For the sake of clarity, a system is defined as a set of regularly interacting, interdependent variables forming a unified whole; "statewide" refers to meeting needs of teachers in all areas of the state to the extent possible; and "comprehensive" includes both preservice and inservice.

By definition, preservice and inservice teacher education herein relate to both baccalaureate and industry-based programs. Discussions of post-baccalaureate degree programming and research are not addressed except where these dimensions may have been casually referenced in the literature review or where they may have been inherent to a discussion of selected state profiles of vocational teacher education.

Preservice teacher education is further defined as those teacher education requirements essential for initial teacher certification or licensure, while inservice education is related to the professional and/or technical enhancement of credentialed teachers.

The paper sets forth some basic assumptions upon which the ensuing discussion is based, offers a historical brief and an assessment of the current status of vocational teacher education across the nation, and references the impact of the federal presence upon vocational teacher education. It presents some contemporary views and practices regarding vocational teacher education in selected states, and it identifies some common practices and/or enduring approaches of vocational teacher education as related to such characteristics as needs assessment and analysis, goal setting, the division of labor, funding and accountability. Finally, the paper sets forth some cogent recommendations for systematically providing vocational teacher education in a technological and informational age.

Assumptions

Discussion and recommendations set forth in this paper are based upon the following assumptions.

1. Vocational education is a state level responsibility that embraces vocational teacher education as an integral component of the delivery mechanism. This assumption emanates from the long-standing federal reference and inclusion of vocational teacher education and personnel development in state plans for vocational education.

2. A statewide systems approach to vocational teacher education is the most efficient and effective means of providing programs and services. Judicial use of limited financial resources, assurance of access, a reasonable balance between supply of and demand for vocational teachers commensurate with labor market needs, and a cursory analysis of generally acknowledged successful vocational teacher education programs that reflect a state systems orientation were the bases for this assumption.

3. A statewide system of vocational teacher education should involve, at minimum, representation from state education agencies, institutional service providers, and user clients, including teachers in training and teacher consumers (employing entities) in the planning, governance, and evaluation of such a system.

STATEWIDE SYSTEMS OF VOCATIONAL TEACHER EDUCATION TO MEET THE CHALLENGES OF CHANGING TECHNOLOGY

The great debate about educational reform that is sweeping the nation is sending shock waves throughout the teacher education community. The conventional college of education is under fire. The credibility of the professor of teacher education is being challenged. Arguments frequently surface as to the significance of pedagogical influences upon learner outcomes. And conflicting views between accreditation and certification bodies versus institutional service providers are often noted.

Although these issues apply generally to teacher education in the broadest sense, the impact upon vocational teacher education appears to be particularly acute. Historically, universities and state education agencies have shared significant roles in the vocational teacher education enterprise. Cooperative and collegial relationships have been long-standing and mutually beneficial.

Conditions, however, are changing. There is the contention that state education agencies are becoming too restrictive in amounts and specifications of funding vocational teacher education. On the other hand, state agencies perceive an attitude of exploitation on the part of vocational teacher education institutions with little or no accountability for funds received. Meanwhile, local education agencies claim that their vocational teacher education needs are not being met. While cooperative, mutually beneficial relationships are not totally absent, they are more difficult to locate than in the past.

Erickson, writing in the September, 1985 issue of Vocational Education Journal noted particular challenges facing vocational teacher education today. In particular, he identified the change in perceived roles of vocational teacher educators from a more traditional field service orientation to one of "...staying on campus and engaging in more research and development activities." This change is, in many ways, incongruent with personnel development priorities of state departments of education. State departments see little value in sustaining or increasing funding subsidies for services that are not responsive to their needs.

Additionally, Erickson discussed the lack of a standardized program of vocational teacher education. He noted duplications and inefficiencies within institutions and across states. Also referenced was the higher education communities' less-than-mid-level priority given to vocational teacher education programs. Erickson considers these factors to be deterrents to improving vocational teacher education's status and credibility.

In addition to Erickson's observations, Letwin (1978) noted, as a result of reviewing the vocational teacher education funding patterns in 43 states, that there was a trend of diminishing state education agency subsidy for undergraduate teacher preparation in favor of greater support for inservice activities.

Changes in support patterns were reported by Hamilton (1985) in a study at the National Center for Research in Vocational Education. An extensive literature review on the subject of vocational teacher education plus telephone interviews with state education agency staff from ten states indicated that "undergraduate education is increasingly perceived as a responsibility that the university must provide from basic revenue sources (tuition and regents' support), not from state vocational education funds."

While these circumstances may be sufficient cause to re-think vocational teacher education organization and delivery, the emergence of three more recent factors accentuates the urgency of immediate attention to this important component of the vocational education infra-structure.

1. An increased demand for accountability of tax dollars at all governmental and institutional levels. In an era of static financial resources and a growing competition for the resources that do exist, there is an ever-expanding awareness on the part of the general public as to where its tax dollars go. Political leaders and policy makers are constantly pressured to exercise prudent judgment and make responsible economic decisions.

2. The narrowing federal agenda for vocational education support and its subsequent impact upon state governance of vocational education. Historically, the source of state subsidies for vocational teacher education has been federal vocational education dollars. The shift in federal emphasis from comprehensive program support and maintenance to program improvements and targeted populations is readily apparent in the Carl D. Perkins Vocational Education Act.

   Also, the more recent Gramm-Rudman-Hollings budget balancing legislation poses many questions regarding the manner in which states go about their vocational education business. Federal initiatives such as these will undoubtedly impact substantially upon vocational teacher education across the nation.

3. A trend toward coalescence of similar social initiatives in the form of partnerships and collaborative efforts. Cooperative efforts are being launched among various organized resource groups in order to reach more far-reaching and productive outcomes. The separation of vocational teacher education from the overall national and state level policy setting and administrative entities of vocational education seems contrary to such coalition movements. Indeed, in light of the recent emphasis on improved linkages and a statewide systems orientation that is inherent to most public vocational education programs, the argument is compelling for a redressing of vocational teacher education in terms of role, relationship and organizational patterns.

Prevailing state and institutional issues and policy questions related to vocational teacher education control, curricular content, funding and accountability must be debated. The collegial structure most appropriate for the principal actors within a state vocational education infra-structure must be examined and strategies must be identified to set in place those elements that appear logical and promising to the enhancement of vocational education for the year 2000 and beyond.

Vocational Teacher Education - Past and Present

Over the past sixty years vocational teacher education has enjoyed a somewhat unique position in the higher education community. For decades state and federal vocational education dollars have supplemented college/university resources in support of vocational teacher education programs. Few other programs with similar mission and responsibility have characteristically received financial support external to the traditional college/university process.

Unquestionably there has been substantial external financial support for vocational teacher education throughout the nation. From the enactment of the Smith-Hughes Act in 1917 the education of vocational teachers has been considered an important issue. That law required each participating state to designate programs approved to train and retrain vocational teachers (Erickson). Though this set-aside provision was eliminated with the enactment of the George-Barden Act in 1946, states continued to supplement vocational teacher education institutions with federal and/or state monies. Typically the support was 50 percent of salaries and benefits of designated university teacher educators and support staff, and in some instances the reimbursement was at the 100 percent level (Hamilton).

The passage of the Vocational Education Act of 1963 and the Vocational Education Amendments of 1968 and the resultant dramatic growth in vocational education gave further importance to vocational teacher education. Many states increased the institutional allocation of federal vocational monies, and, in some cases, state dollars to rapidly prepare a phalanx of vocational administrative, supervisory and instructional personnel.

The Education Professions Development Act, particularly Part F, Sections 552 and 553, made available considerably more federal dollars to colleges and universities in the early to mid-1970's. These funds were targeted toward preparing state and national leaders in vocational education and maintaining and advancing the competency levels of field-based vocational education practitioners.

Although a federal presence has been substantial, a review of literature of current policies and practices related to vocational teacher education reveals little, if any, conformity of pattern and/or magnitude. Most writers do not focus upon teacher education. Typically documents concentrate on teacher preparation or inservice provisions in a content area such as the preparation of agricultural teachers or the selection of business education teachers. As Erickson points out, the field of vocational teacher education is fragmented by program area instead of unified by common interests. Other publications attend to the substantive nature of specific types of staff development such as the ideal undergraduate teacher education curriculum (Hamilton).

Some authors have reported ongoing activities in their states designed to improve staff development systems. Minnesota (Moss 1976), Pennsylvania (Ryan 1979), Michigan (Ferns and Callahan 1983), Virginia, Illinois and Minnesota (Rossman and Copa 1985) have reportedly initiated structures for personnel development. Hamilton set forth four models for comprehensive vocational teacher education-university linkages in Ohio wherein the delivery and implementation of eight basic services would be provided to vocational education through the state department of education. The statewide systems described by these authors differ in terms of funding structure, types of activities funded, and degree to which services are localized. They are similar in that nearly all have a council or advisory body, and nearly all fund on some type of contractual basis.

A few authors have presented a systems emphasis to staff development approaches. Parks (1972) and McComas (1972) presented models for personnel development and integration of various types of activities often separated in typical practice. Miller (1975) provided a model for vocational teacher education inservice, recommending a multi-year framework as opposed to a series of isolated staff development events. These few sources comprise the writings of comprehensive statewide systems of teacher education in a theoretical sense.

A capsule summary of vocational teacher education from its genesis to current-day status could suggest many things to the reader. For instance, vocational teacher education, in varying degrees has been an integral component of the vocational education delivery process since its beginning. Common belief holds that vocational teacher education requires external support in order to sustain an appropriate level of respectability in the world of academia. It has long been argued that vocational teacher education is not of sufficient institutional priority to command its rightful share of essential and available fiscal resources. Thus, some form of external financial supplement is imperative to its ongoing operation.

Such an argument seems less than convincing, however, when one considers the numerous other inequities that are apparent in institutions of higher learning. Typically, colleges of medicine have been held in higher esteem than colleges of education, and the liberal arts have often appeared more prestigious than colleges of agriculture or business. How do these seemingly lower status programs survive without some form of external support? Obviously the processes of institutional budgeting and fiscal allocation have accommodated basic needs of these disciplines of perceived lesser respect. Could not a similar statement for institutional stewardship be made on behalf of vocational teacher education?

The refutation of this time-honored rationale for support of vocational teacher education does not negate the need for an external support base for vocational teacher education. A large segment of vocational teacher education differs from the provincial approaches to teacher education in general. Most non-vocational teacher education programs, and indeed, many vocational teacher education programs are are designed as baccalaureate in nature. However, a substantial part of vocational teacher education is not baccalaureate driven. Teacher candidates are recruited from business and industry on the basis of proven technical expertise. The teacher education program is responsible for providing these teachers-in-the-making the pedagogical skills and professional nurturing necessary to produce competent professional teachers.

This approach to teacher education requires an intensity and a personalization that is uncharacteristic of standard teacher education patterns and will continue to need supplemental funding if institutions are to fulfill such a role.

Another departure of vocational teacher education from the standard teacher education program lies in the knowledge base. Standard teacher education programs relate to a somewhat static body of technical knowledge that remains constant from year to year. Vocational teachers, on the other hand, deal in a dynamic arena of rapid technological change, and require regular and frequent updating if they are to stay current in their respective occupational specialties. This extensive inservice dimension of vocational teacher education, once again, falls outside the normal institutional pattern of teacher education and will most likely require external financial support.

For these reasons a strong argument can be made that in order for the unique needs of vocational teacher education to be addressed, funding incentives and subsidies must be available.

In addition to the unique characteristics of vocational teacher education within the institutional setting, vocational education, more than any other segment of public education, is driven by factors external to the central education system. The general state of the economy, fluctuating employment rates, and an annual accountability mandate all bear upon the manner in which vocational education does business.

Historically, when the economy is soft and unemployment is high there has been a corresponding decline in the successful placement of vocational education graduates. These circumstances impact negatively on enrollment and diminish the need for new and replacement teachers, thus having a direct impact upon the vocational teacher education delivery system. Conversely, when the economy is expanding and the employment outlook is bright vocational education becomes more attractive to prospective students, enrollments in vocational education increase and teacher demand begins to rise.

Difficulties resulting from these external factors have recently been compounded by other socio economic conditions including:

1. external pressures upon vocational education emanating from the nation's search for educational excellence which has even further compounded vocational education enrollment declines,

2. increasingly austere budgets from which resources must be drawn to support vocational teacher education programs,

3. growing demands for accountability of public tax dollars in terms of cost benefits and efficiencies, and

4. declining school enrollments and the subsequent diminishing need for vocational education professional personnel at all program levels.

These circumstances clearly extend beyond institutional boundaries and are statewide in scope. In order to deal with these conditions, with their highly diverse and fluctuating variables, there must be a central management and control point. No longer can a laissez-faire atmosphere of vocational teacher education continue to exist. The need for comprehensive planning is apparent. Prudent allocation of resources is the order of the day, and quality performance standards and program accountability have become a way of life.

Vocational Teacher Education in Selected States

States have taken various approaches to vocational teacher education. A brief review of practices and policies within selected states is provided here to offer insight into the reality of alternative procedures and to provide an overall configuration or gestalt of vocational teacher education across the country. Though not depicted as model programs, the state vocational teacher education modes of operation capsulized here can offer a delineation and discussion of promising practices in vocational teacher education.

Data collected by Hamilton and additional follow-up contacts allow a synopsis of vocational teacher education practices in states where changes have recently occurred or where new or different approaches in vocational education-university linkages regarding personnel development are being employed. These states include Florida, Illinois, Minnesota, Mississippi, New Jersey, North Carolina, Ohio, Oklahoma, Pennsylvania and Texas. While each state was purported to have a process for personnel development in place, data and follow-up responses note a wide variance in how state systems are perceived.

Florida

In Florida all nine of the state universities receive funds from the education agency to cover secretarial services and vocational teacher educators' travel. In addition each university may apply for federal funds via the state education agency based on an annual funding guide describing activities designated as priorities in a given year. This guide is developed from a needs assessment conducted jointly by the state staff and university personnel. Sole source awards are also made to selected universities based upon special abilities. To a major extent, universities apply and receive funds for projects that differ from university to university, thereby creating specialization in vocational teacher education areas (e.g., Florida State has been heavily involved in curriculum development, and the University of South Florida has emphasized inservice workshops in electronics.)

It should be noted that state vocational teacher education support is also given to the larger community colleges which apply these funds for their own staff development and/or for working with local school districts not served by a major university.

Florida personnel indicate a need for local vocational education district directors, community college deans and teacher educators to increase joint planning for improved coordination within the state.

Illinois

In Illinois, nine state universities regularly receive funding from the state education agency. This funding includes one-half the salary of one person for management of each of the institutions, an allowance for office maintenance, and specified amounts for capacity building activities and staff development of teacher educators. Capacity building activities are aimed at improving the ability of the institution to serve its population and at revising university curriculum. These capacity building monies can be used for teacher updating at local levels, but such an initiative is not actively solicited by the universities. The monies for staff development of teacher educators are primarily used for travel to workshops, seminars and conferences.

Receiving these monies is contingent upon each university submitting a plan for approval to a designated staff member of the state education agency. A final report must also be submitted.

Additional monies are available through response to annual RFP's from the state education agency. Examples of RFP thrusts include curriculum development, third-party evaluations, research endeavors and concept papers. RFP priorities are set annually by state staff.

A significant aspect of Illinois' vocational teacher education system is the university council for teacher education, which meets monthly to monitor teacher education activities, solve problems, share success and, in general, to promote collegial relationships.

Illinois personnel suggest that vocational teacher education would be improved by the initiation of long-term individualized development plans for each teacher educator, staff development activities for local vocational educators initiated by the universities; and differentiated funding to universities based upon the number of vocational program areas provided.

Minnesota

Four universities in Minnesota are funded by the state education agency to provide inservice training to local vocational educators. Each university is responsible for one of four sections of the state on a contractual basis. Services provided under the contract are limited to those not typically provided as a part of university teacher education programs. Activities covered in the contracts include technological updates and non-instructional services such as testing, coordination, consultation, and evaluation.

Needs of each program area are assessed locally through regional meetings. The respective universities have coordinators who oversee the contracted activities and develop an end-of-the-year report. The Minnesota Research and Development Center is contracted by the state education agency to manage research and development endeavors.

One of the four universities operates on a five-year contract while the others are on annual contracts. The five-year plan has allowed an increase in staff commitment and greater continuity of effort.

State personnel indicate a need for local and regional structures to do more staff development that may be incongruent with the university course structure.

Mississippi

Mississippi provides regular, but differentiated amounts of support to three universities. An annual paper is submitted by each university identifying service activities and documenting a budget, including costs of salaries, office and instructional supplies, travel and communications. The state education agency may specify certain activities to be carried out.

A key responsibility of the vocational teacher education units at the three universities is assistance to teachers seeking renewal of teaching certificates. The teacher educator, local administrators, and state staff coordinators work with the individual teacher to determine specific inservice needs. The teacher educator develops activities for the teacher to meet the needs specified in the individualized plan.

Preservice teacher education is funded through the RCU unit located in a college of education at one of the three institutions. Research and curriculum development are also carried out by the RCU unit.

Mississippi personnel recommend three changes to improve teacher education in Mississippi. The establishing of centers for vocational teacher education (now underway) is perceived to be an advantage. The use of RFP's is thought to cut down on current paperwork and increase accountability. It is also felt that there is a need for improved coordination between the RCU and the vocational teacher educators at the three universities.

New Jersey

Funding for vocational teacher education personnel development in New Jersey is coordinated through Rutgers State University and five colleges. Preservice vocational teacher education is funded only for non-degree teachers and is funded on a per client basis.

Inservice teacher education activities are funded via an RFP to the Vocational Education Resource Center (VERC) housed at Rutgers. The activities provided are determined by state priorities and needs assessment. Professional organizations are involved in the assessment, and when needs of the professional organizations are perceived to be in league with the state division, co-funding of activities takes place.

The five colleges can respond to RFP's for special projects such as sex equity endeavors and specific consumer homemaking projects. These RFP's are open to other agencies and institutions.

State personnel indicate that a good collegial relationship is of utmost importance in the state education agency-university linkage. Advisory committees are used to foster positive interaction.

North Carolina

The state education agency in North Carolina does not fund any university or agency on a sustaining basis. Primarily, efforts are in the form of projects awarded on an RFP basis.

Inservice education is supported as special projects through RFP's or sole source contracts. Some universities provide workshops for non-degree teachers, also on an RFP basis. Special projects, such as the development of basic skills infusion, are also funded.

North Carolina offers some unique aspects to vocational personnel development. The state education agency, in conjunction with the North Carolina Teacher Education Association, offers three workshops annually. A "visiting scholars" activity is operated by one institution where ten vocational teacher educators return to public school vocational classrooms to teach for ten days.

Various advisory committees and program review outcomes provide input for assessing needs. The state education agency sets priorities and determines the activities on a year-to-year basis.

Ohio

Efforts to redesign vocational teacher education in Ohio were brought about by the need for greater accountability, increased need for inservice education of veteran vocational teachers, and growing concern for availability of teacher education on a regional basis. Ohio is currently in the process of implementing a revised vocational teacher education personnel development plan to meet these needs. (For details, refer to appended information.)

Funding of vocational teacher education in Ohio has been on a salary reimbursement basis for designated teacher educators at nine universities, most of which do not have comprehensive vocational programs. The new plan for personnel development will provide funding on a RFP basis to five comprehensive regional centers. Funding will include services to non-degree teachers (both an initial workshop and two years of follow-up), inservice programs for teachers in pedagogy as well as technology, research, and teacher testing. Provisions for staffing costs and innovative teacher education activities are to be included. The RFP's will be based on statewide needs assessments and suggestions from the Vocational Education Personnel Development Coordinating Council which will serve in an advisory capacity for leadership and direction to the total vocational teacher education initiative.

The RFP's will be established on a three-year basis, though budgeting will be coordinated annually. Evaluation of the teacher education activities and continuous needs assessment will be carried out during annual program reviews and through Coordinating Council activities.

The new plan does not include funding of preservice baccalaureate programs in vocational teacher education.

Oklahoma

Two universities in Oklahoma receive federal monies through the state education agency. The monies are stipulated for excess costs of training vocational teachers including: vocational student organization leadership functions performed by teacher educators, first-year teacher supervision of degreed teachers, attendance at professional meetings, training for non-degreed teachers, and professional improvement meetings conducted in area vocational-technical schools. These services are funded on a yearly basis. Accountability is difficult, according to Oklahoma personnel, and rests on informal assessment by state supervisors interacting with teacher educators throughout the year. A special emphasis program may be contracted through an RFP, but this is done on a very limited basis.

Off-campus credit courses for teachers are offered by one university, but are not funded by the state education agency. Technical update programs for teachers are conducted with business and industry and funded by the state education agency.

It appears that emphasis is placed on assistance to non-degree teachers entering the teaching field and coverage of excess costs of teacher education programs at the two universities. Less emphasis seems to be given to multi-year thrusts or provisions of inservice to current teachers.

Texas

In Texas most of the state supported universities with approved vocational teacher education programs receive funding from the state education agency. Such funding is most commonly in the form of 50 percent of salaries, and these agreements are on a yearly basis. Little emphasis is given to research with most emphasis placed on field oriented activities. Prioritization of these activities is the result of decisions by the state agency staff. The RCU unit monitors the use of funds.

None of the universities has comprehensive vocational education programs; all specialize in a particular area such as teacher inservice, preparation of non-degree teachers in a particular program area, or administrator preservice. Until recently vocational agricultural education and vocational home economics education were funded by a special line item in the state legislature's budget. With the elimination of this item, attempts are in process to cover funding of these programs by the state education agency.

State personnel in Texas anticipate changes in areas of funding to accompany changes in state certification standards which require greater inservice education course work.

Pennsylvania

Pennsylvania has four centers for vocational professional development, each located at a university. The state education agency contracts annually with the centers to support vocational teacher and administrative training that universities do not normally provide.

Each of the four centers performs a variety of services. These include programs for non-degree personnel (entry phase and one-year follow-up), competency assessment for new teachers, credit courses for advanced certification, pedagogical workshops and seminars for teachers (both degree and non-degree).

Centers may also include in their proposal to the state division the provision of research activities, placement activities, and cooperative agreements with other institutions of higher education.

The "center" approach to vocational teacher education services was initiated in 1976-1979. It is thought by state personnel that the change has improved the division's accountability for funds and increased the influence that the state education agency has on activities. State personnel would like to move toward the centers having an increased role in the broader area of vocational professional development. There also appears to be a need for planning beyond the one-year contract.

Analysis of Practices

The review of vocational teacher education approaches by these ten selected states is not meant as an attempt at comparison and contrast. Indeed, comparison is virtually impossible due to variations in demography, differences in state emphasis related to secondary or postsecondary vocational education, and relationships with and strength of state vocational associations. It is possible, however, to identify some trends among states and to draw some implications as to essential components of a state vocational teacher education system.

Goal setting or needs assessment to give direction to teacher education provisions appears to follow a variety of patterns. Priority decisions frequently seem to be based on the state department of education's determination. This determination is aided in some cases by statewide assessments of local educators and/or teacher educators.

There are other instances when little consideration appears to be given to goals or needs, and teacher education institutions arbitrarily and unilaterally determine what will be provided. In situations where joint funding activities occur there are logically joint efforts in determining priorities. Some states have moved to a council approach with representatives of principal parties (state departments, teacher education institutions, vocational organizations, local education agencies) determining the priorities or advising the state education agency of needed teacher education programs. Several states alluded to the appeal of such a council approach though they had not yet moved in that direction.

Method of funding vocational teacher education units appears to be following a trend away from salary subsidy to performance based arrangements. Frequently funding arrangements are composed of a combination of base subsidy and some form of performance contract. A request for proposal is often used to establish the contract.

Evaluation, or accountability, for vocational teacher education programs and services appears to be more straightforward and precise with the performance contract funding arrangement. Contracted products and services can be easily matched with end-of-year reports. Yet, a more overriding evaluation concern might be the quality of the teacher education provided. The state personnel interviewed gave little recognition to this type of evaluation, though such activity may be existent.

Activities funded within the state systems reviewed vary greatly. Most states provide coverage of services to non-degree teachers both in a preservice mode and during the first year or two of entry into teaching. Few states appear to directly provide funds to preservice baccalaureate vocational teacher education programs though such activities may be funded indirectly in those states that continue to subsidize institutions on a straight salary reimbursement. Some emphasis on inservice education programs is given in each state, but few states appear to give this a major priority in their funding provisions. A host of additional services are provided by some states - teacher testing, special needs services, research and inservice programs for vocational administrators - but none of these appear to be provided by a majority of states polled.

Localization of services to teachers does not appear to be a priority among state systems. Several states did indicate movement to regional centers wherein services would be nearer to greater percentages of vocational teachers. Other states continue to have highly specialized services offered at only one site yet the demographics of these states do not allow for an efficient itinerant approach to serving localities. Inservice programs and preservice non-degree programs, particularly, appear to need to be available near the teachers. Without these services teachers have minimal access to vocational inservice opportunities and tend to meet certification update requirements through inappropriate course selections. (The authors of this paper found the regionalization of services to be one of the strongest requests within the vocational community in their state.)

Comprehensiveness of state systems, as indicated earlier, can be considered in terms of program area or coverage of instructional as well as administrative areas in vocational education. The review of states did not yield information that would indicate comprehensiveness to this extent. A few states indicated services to administrators and several other states seem to be providing a "full service bank" of activities to all of the program areas. This apparent limited comprehensiveness does not mean that such needs are not being met. Quality services to meet these needs may be provided by state divisions of vocational education within program areas, professional associations, and local education associations. However, it seems clear that the concept of statewide systems for personnel development is not truly comprehensive in nature.

The preceding review of literature and the analysis of vocational teacher education in selected states, although exceedingly divergent in concept and practice, do offer a foundation upon which to propose a systems approach to vocational teacher education. The remainder of this paper will summarize the findings in terms of conclusions and recommendations, and propose a system for vocational teacher education that embraces what appear to be some common and defensible elements.

Summary, Conclusions and Recommendations

This paper was undertaken for the purpose of proposing a systems approach to vocational teacher education. The rationale for such a position, from the authors' perspectives, was based upon three general assumptions:

1. that vocational teacher education, although an institutional concern, is a state responsibility,

2. that a systems approach to vocational teacher education is the most efficient and effective means of assuring the greatest return on the investment in terms of quantitative and qualitative output, and

3. that a systems approach involves a broad representation in planning and policy recommending pursuits.

Information presented in this paper lends credence to these assumptions. A synthesis of the findings notes that the locus of much vocational teacher education activity does indeed currently emanate from the state education agency. Also, fragments of a systems approach to vocational teacher education can be detected in several states although no state can boast of a totally integrated and functional system as earlier defined. Finally, in this era of coalition and partnership building, one could hardly ignore the trend toward greater involvement of key actors as evidenced in some states in planning and operating vocational teacher education programs.

In summarizing the contents of this paper in the context of evolution, current status, and emerging trends in vocational teacher education, some obvious conclusions can be noted.

1. A federal/state presence in vocational teacher education has been a long-standing tradition, and a continuing presence is obvious today in a

majority of the states.

2. The traditional state/institutional roles in vocational teacher education partnerships are in transition, both in terms of program focus and contractual agreements. This partnership emphasis is shifting away from preservice baccalaureate programs to greater concentration on non-degree certificate based programs and inservice initiatives.

3. Although there are some components of a systematic vocational teacher education delivery mechanism in place from one state to another, there is little, if any, congruency among the ten selected states regarding the overall structure and administration of vocational teacher education.

4. Regardless of some states' tendencies to move toward a more centralized approach to vocational teacher education, a general practice of statewide vocational teacher education planning and cooperation appear to be the exception rather than the rule.

5. Current practices in vocational teacher education do not promote geographic accessibility or comprehensive program enrollment opportunities. Selected institutions within a given state have specialized in designated program areas, making it inconvenient or virtually impossible for student clients, residing great distances from those institutions, to benefit from a specialty offering.

6. The deployment of a sophisticated and comprehensive needs assessment and analysis process appears to be limited. Tradition, in terms of ongoing institutional involvement and program orientation, seems to still be paramount in determining the nature of a vocational teacher education program.

7. Increasing competition for available resources and pressure to respond quickly to ever-changing socio-economic and technological needs emphasize the necessity for a more objective and prudent process for allocating vocational teacher education resources. There is a trend away from entitlement grants toward performance based contracts with somewhat specific accountability criteria.

Recommendations

In view of the above conclusions and some perceptions of what the future may hold for vocational teacher education, three recommendations are set forth for consideration in structuring and administering vocational teacher education programs for the twenty-first century. These recommendations can be of assistance in formulating a statewide philosophy or operational strategy related to broad concepts of a system of statewide vocational education personnel development. Beyond these wide spectrum recommendations more specific recommendations are proposed in the form of elements or components that appear to be essential to the structuring of a successful statewide vocational teacher education personnel development system.

1. The state education agency should be responsible for designing, implementing, and maintaining a statewide system of vocational teacher education. The legal base to perform such functions has been vested in state agencies via federal legislation in terms of the authority and the responsibility and accountability for expenditures. Further, the state agency enjoys a unique statewide perspective and an awareness of statewide needs that afford an advantageous position to provide leadership for a statewide system of vocational education personnel development.

   The intent of this recommendation should not be misconstrued as an advocacy of the state education agency as the sole actor in vocational teacher education. The provision of vocational teacher education needs to be a cooperative venture with teacher educators and local providers of vocational education as involved parties in all phases of vocational education personnel development. The onus of responsibility for central management and the obligation for leadership of a vocational teacher education system, however, lies with the state agency.

2. The statewide system should focus on non-traditional institutional responsibilities, i.e., preservice needs of teachers recruited from business and industry and inservice needs of practicing teachers.

   Limited vocational education funds should be concentrated upon those activities not typically funded via regents and/or tuition. At the same time, a statewide vocational teacher education system should involve a total program sensitivity related to vocational teacher education. Though social and economic factors may affect priorities in terms of emphasis and support, the entire teacher education arena must be of concern to all involved parties. For example, funding may not extend to vocational teacher education baccalaureate programs, yet issues related to such programs are germane to the statewide system.

3. A statewide system for vocational teacher education should include the following critical elements. (A schematic for a statewide system for vocational teacher education is presented on page 19.)

   a. A planning and policy recommending body. Such an advisory body, selected from appropriate state education agency staff, institutional providers, and local school districts is an essential component of the system. It is necessary for continuous needs assessment and evaluation processes, and it can foster overall agency-institution coordination.

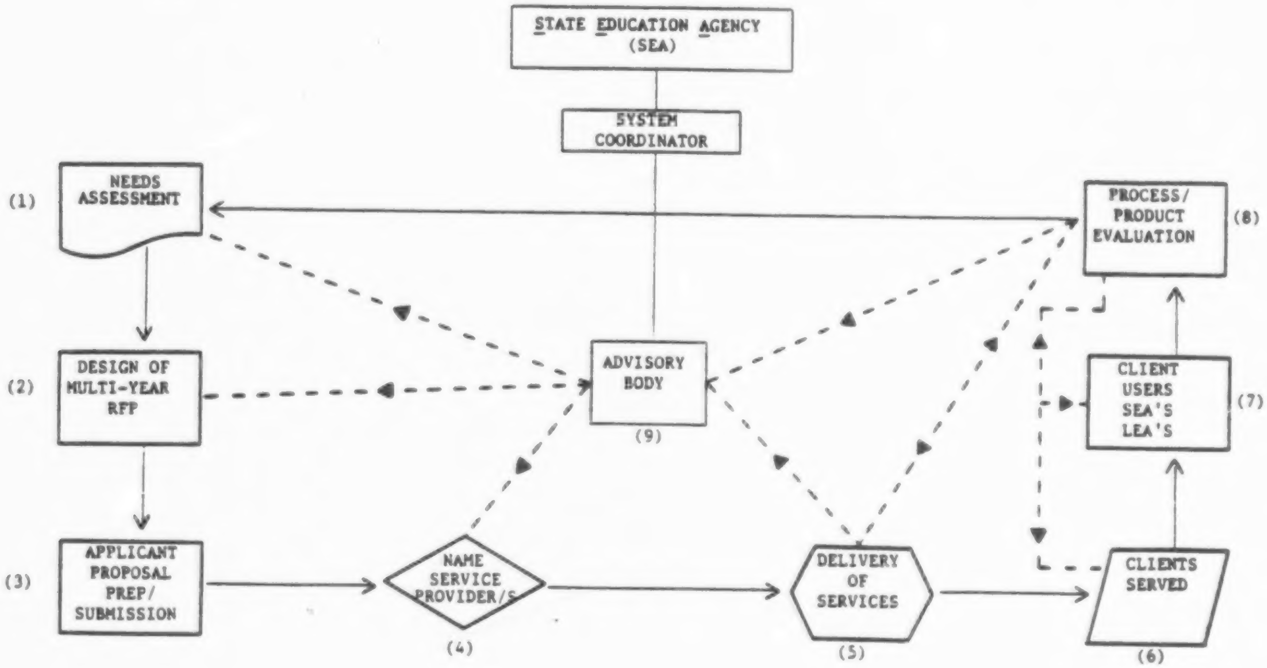
   b. A statewide needs assessment. A thorough assessment of vocational teacher education needs as perceived by users (teachers and administrators) and providers (state agency staff and teacher educators) is necessary in order to aid in establishing priorities and allocation of resources. Such assessment should occur in the initial stages of system planning and must continue in order to determine changing needs within the vocational community.

   c. Services geared to the preservice needs of teachers recruited from business and industry and the inservice needs of practicing teachers. Activities within a statewide system of vocational teacher education should be varied according to needs assessment results but should include programs for preservice needs of "non-degree" teachers and inservice needs of those currently teaching. Limited resources will likely negate the funding of preservice baccalaureate programs.

   d. A comprehensive vocational program. All vocational programs should be included in the statewide system for vocational teacher education. Some program areas may need greater teacher education attention in terms of number and nature of teachers involved. Yet all program areas need to be an integral part of the statewide system.

   e. Readily accessible teacher education services on a geographic basis. Services to vocational teachers should be made available on a geographic basis to

A STATE SYSTEM FOR VOCATIONAL EDUCATION PERSONNEL DEVELOPMENT


STATE EDUCATION AGENCY (SEA)
SYSTEM COORDINATOR
(1)
NEEDS ASSESSMENT
PROCESS/ PRODUCT EVALUATION
(8)
(2)
DESIGN OF MULTI-YEAR RFP
ADVISORY BODY
(9)
CLIENT USERS SEA'S LEA'S
(7)
(3)
APPLICANT PROPOSAL PREP/ SUBMISSION
NAME SERVICE PROVIDER/S
(4)
DELIVERY OF SERVICES
(5)
CLIENTS SERVED
(6)

LEGEND:
____ Flow
---- Communication

SYSTEM NOTES:

SEA is responsible for system implementation and operation.

System coordinator is a professional employee of the SEA and provides administrative guidance and staff support to the advisory body as well as direct the various system functions and activities.

(1) Statewide and regional assessment of personnel and support staff needs.

(2) Multi-year RFP prepared by SEA with input from advisory body.

(3) Service providers (eligible colleges/universities) prepare and submit competitive proposals.

(4) Service providers designated by the SEA with input from advisory body. Consideration is given to client accessibility and institutional capacity.

(5) Provision of services by designated providers.

(6) Clients participating in designated personnel development activities.

(7) Teacher employers and service benefactors.

(8) Evaluation conducted by the SEA.

(9) Advisory body includes representation from the SEA program units, service providers, client participants, related professional associations, and the Council on Vocational Education. The state director of vocational education serves as an ex officio member.

the extent possible. Access to vocational teacher education, particularly inservice programs, must accommodate the user.

f. Multi-year planning. Planning for statewide teacher education systems must go beyond a single year. Teacher education institutions must be allowed the benefit of adequate time for planning and capacity building.

g. Performance-based contractual funding arrangements. Contracted agreements stipulating specific outcomes encourage careful planning by all parties and provide a precise means of evaluation.

h. Evaluation component. Evaluation based upon both contracted output and user satisfaction in terms of quality of teacher training provided should be an integral part of the statewide system for teacher education. Feedback of evaluation results are critical for continuous refinement of the system.

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Appended Information

OHIO'S SYSTEM FOR PERSONNEL DEVELOPMENT - IN PROCESS

Numerous factors brought about exploration and ensuing changes in the linkage pattern of Ohio's vocational teacher education and the Division of Vocational and Career Education. These factors included: 1) the need to account for and refocus the direction of funds expended, 2) concerns regarding the absence of services to teachers in some regions of the state, and 3) the narrowing federal agenda for vocational education support.

The first step in pursuing issues related to vocational teacher education was to fund a study in late 1984 conducted by the National Center for Research in Vocational Education to:

- review alternative delivery patterns and to identify appropriate vocational education-university linkage factors,
- design alternative vocational education-university linkage models, and
- recommend a vocational education-university linkage model with processes for funding, implementation, and administration.

As an outgrowth of results and recommendations from this National Center study the Division of Vocational and Career Education is in the process of implementing a new Vocational Education Personnel Development Model. This model, when fully in process, will engender a statewide system of vocational teacher education. Highlights of the plan are presented here.

General Assumptions

- A state advisory body for vocational education personnel development will be established.
- An initial statewide needs assessment will be conducted with subsequent assessments carried out on an annual basis.
- Baccalaureate level teacher preparation programs and graduate programs are a basic responsibility of the teacher education institutions and will be supported 100 percent by the universities.

- Preservice teacher education for teachers recruited from business and industry will be supported by the SEA at an amount equal to costs in excess of tuition, Ohio Board of Regents state subsidy, and/or service fees.

- Curriculum coordination and dissemination activities will be centralized at one site.

- State sanctioned vocational education research and development activities will be supported in part or totally by the State Department of Education, Division of Vocational and Career Education.

- The State Department of Education, Division of Vocational and Career Education, will designate a portion of a staff person's time to maintain linkage relationships with universities, SEA's and LEA's related to personnel development. This staff person will be housed at the State Department of Education.

- Planning will be for a three-year period. The three-year plan will be budgeted in general terms with an annual budget.

- A transition period will be necessary to move from the current teacher education/state department linkage pattern to the new model. Time will be allowed to make this transition in terms of funding from the state department and in terms of reemphasis of services on the part of this university.

Advisory Body

A key component of the model is a vocational education personnel development advisory body. This body is composed of representatives from the involved universities, State Department of Education, local education administrative and instructional personnel, and professional associations.

The advisory body serves as a mechanism to coordinate and interrelate components of vocational education personnel development. In it's early stages the advisory body has been instrumental in the actualization and implementation of the new personnel development model. More specifically the advisory body will:

- assess professional development needs by reviewing data and providing experiential input,

- identify unique and emerging aspects of vocational education which have implications for personnel development, e.g. federal and state legislation, certification issues, etc.,

- assist in maintaining involvement with preservice degree-granting vocational education programs,
- assist in formulating statewide goals for continuous improvement of vocational education personnel development, and
- appraise effectiveness of personnel development practices in terms of meeting immediate and long-range goals.

The advisory body has authority to make recommendations to the Ohio Department of Education and, more specifically, to the Division of Vocational and Career Education regarding the development, implementation, and evaluation of a coordinated personnel development program.

Operations

Ohio's system for personnel development, when fully implemented, will operate with the following guidelines.

- Five comprehensive regional centers for personnel development will be funded by the state education agency.
- A request for proposal (RFP) for each region will be based on needs assessments, data from previous years, and recommendations from the advisory body.
- A single institution or an institutional consortium within a regional jurisdiction may propose the establishment of a center at a central site.
- A center may be a contractee with institutions in other regions to provide a particular service.
- Only those institutions approved by the State Board of Education to train vocational teachers may be the regional contracting agent with the SEA.
- The RFP may include services related to pedagogical and informational updates and vocational education research and development in both generic aspects of vocational education and in specific aspects of program areas.
- The RFP may include services for preparation of teachers recruited from business and industry.

- Each regional contracting institution is eligible for a reimbursement based upon a given percent of the total contract for the purposes of coordination activities, secretarial services, and other activities related to management of the regional center.
- The SEA may set a maximum dollar value to be funded to each of the regions and reserves the right to refuse funding of a proposal even if it is the only proposal for that region.

- Funding plans for the Vocational Education Personnel Development Model are based on the assumptions that support levels from the State Board of Education will remain stable contingent upon available funds

Progress to Date

As of this date (April 10, 1986) the following have been accomplished.

- Activation of a statewide vocational education personnel development advisory body.

- Formal statewide assessment of personnel development needs.

- Initial drafting of requests for proposal for regional personnel development centers.

- Redirection of a portion of the 1986-87 teacher education funds from contracted institutions toward the initial start up of regional centers in 1987-88.

- Interaction to assure awareness of the new personnel development plan by means of two presentations to the Council of Deans of Colleges of Teacher Education; two statewide conferences of selected deans, teacher educators, state vocational education staff, and other concerned bodies; and a conference for all vocational education state staff members.

Dates for Implementing Stages

* Requests for proposal distribution	January, 1987
* Proposals due	March, 1987

* Funding of regional centers July 1, 1987

Further Implementation

Requests for proposals will be distributed in January of 1987 and proposals will be due in March, 1987. Funding of regional centers will begin in July of 1987.

EVALUATING VOCATIONAL TEACHER EDUCATION PROGRAMS

Floyd L. McKinney
Senior Research Specialist
The National Center for Research in Vocational Education
The Ohio State University
Colombus, Ohio

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City University of New York

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United States Department of Education

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EVALUATING VOCATIONAL TEACHER EDUCATION PROGRAMS

Members of the profession, the popular press, policymakers, and the public at large are expressing concerns about the quality and quantity of vocational teacher education. In a recent address at the annual meeting of the American Association of Colleges for Teacher Education, Lamar Alexander, Governor of Tennessee, (1986) indicated that education has become the top policy concern for the Nation's Governors'. Alexander predicted an increasing interest of policymakers in the activities of colleges of education. In a study conducted by Zellner and Parrish (1985) vocational educators were asked to rank 68 critical issues. The issue, "updating and upgrading teacher education programs" ranked sixth. Interestingly, the highest ranked item concerning evaluation, "evaluation standards for vocational teacher educators," ranked thirty-ninth. One could speculate that the respondents did not perceive current vocational teacher education program evaluation efforts as a promising means of initiating program improvement efforts.

It is important to remember that vocational teacher education programs are conducted in complex contexts. Decisions about all aspects of the program are rendered in intertwined social, political, economic, and educational pressures. The ways institutions of higher education are financed, governed, and coordinated; the roles and responsibilities of different types of state governing boards; and the way state interests often conflict with those of academic administrators all impinge on the quantity and quality of vocational teacher education programs. Given this dynamic context it is imperative that vocational teacher educators revitalize current program evaluation efforts to serve as a meaningful basis for creating and sustaining program improvement.

In this paper, the author hopes to show a need for vocational teacher education program evaluation, provide an indication of the current state-of-the-art in evaluating vocational teacher education programs, note some problems with current evaluation efforts, and provide a brief overview of some possible new directions for vocational teacher education program evaluation. In the space limitations of this paper, it is not possible to deal in depth with any of these areas. However, it is hoped that the readers will have their interests aroused to the point that they will search for more information.

The primary audience for this paper is vocational teacher educators. Secondary audiences for whom this topic should be of interest include education deans, department heads, and state education officials interested in vocational teacher education programs.

IMPORTANCE OF AND NEED FOR VOCATIONAL TEACHER EDUCATION PROGRAM EVALUATION

Basis for Initiating Program Improvement Efforts

Vocational teacher educators, as others in the education enterprise, are faced with fierce competition for public funds at a time of rapid social and technological change. These general conditions nearly always result in calls for improving vocational teacher education programs. If vocational teacher educators are to optimize program improvement there will be strong demands for information about their programs--information that should be provided through program evaluation efforts.

It is the contention of this paper that the major reason one engages in program evaluation, including vocational teacher education program evaluation, is to ultimately bring about program improvement. Hall and Hord (1982) have indicated that

> In our opinion program evaluation must contribute to program development; evaluation information must be fed back into the program for planning, refining and decision making purposes. This is the bottom line for the improvement of teacher education program practice. (p.22)

Improving vocational teacher education programs is essentially an institutional initiative. Federal and state governments, accrediting agencies, consortia, and commissions may stimulate and support improvement efforts, but the commitment and activities essential to program improvement remain centered at the individual university or college level, where vocational teacher education programs are planned, conducted, and evaluated. Turnbull (1982) has noted,

> Educational improvement is fundamentally a local enterprise. The people who can bring it about are those who provide educational services. . . . (p. 57)

While Turnbull's remarks were directed to local school districts, the expressed concept of educational improvement is just as relevant for vocational teacher educators. Vocational teacher educators, department heads, and perhaps deans are the ones who will bring about program improvement in vocational teacher education. If program evaluation is to contribute to program improvement, it must provide useful information to vocational teacher education decision makers and policymakers.

Public Concern With Excellence in Education

When there is mounting public concern for educational excellence, ultimately, a part of that concern is directed to teacher education programs. That concern is evidenced in a recent survey conducted by the National Conference of State Legislatures of state legislative education and higher education committee chairpersons. According to Jaschik (1986) the survey showed that committee chairpersons in 22 states expect their committees to act on legislation in 1986 or 1987 to strengthen the teacher education curriculum.

The public interest in education has been sparked and renewed by numerous commission and study group reports. A Nation At Risk, The Unfinished Agenda, Educating Americans for the 21st Century, and reports by Goodlad (1984) and Boyer (1983) are among the many reports that have heightened public concern about their schools. Nearly all of these reports have something to say about teacher education. Whether or not they specifically mention teacher education many of the recommendations have implications for teacher education. Given that vocational teacher education programs are greatly influenced by institutional and state policies and procedures established for teacher education, it is imperative that vocational teacher educators increase their awareness and understanding of the recommendations of the reports.

Increased Emphasis on Evaluation by NCATE

The National Council for Accreditation of Teacher Education (NCATE) has been a major force as the profession's mechanism for voluntary self-regulation. NCATE adopted new standards in 1985. Several of these standards focus on evaluation, emphasizing the need for teacher education units to be informed of evaluation techniques. Additionally, emphasis is placed on regular monitoring and assessing of the teacher education operation, scope, quality of offerings, and effectiveness of its graduates. The importance of follow-up studies is noted by the indication that they should be used to modify and improve the program(s).

Accountability and Justification

Public programs are constantly competing for public support. Vocational teacher educators are confronted with the need for quantitative and qualitative data to effectively describe the program, account for the prudent expenditure of public funds, and justify program modification. The convincing data needed by vocational teacher educators not only describes "what is," but also explains "why."

CURRENT RATIONALE AND PRACTICE IN VOCATIONAL TEACHER EDUCATION PROGRAM EVALUATION

Major Characteristics of Vocational Teacher Education Programs

Awareness of the characteristics of vocational teacher education is essential to understanding current and potential program evaluation efforts. In the following section some major characteristics of teacher education programs and of vocational teacher education programs are highlighted. Hord and Bethel (1986, p. 2.) suggest that the "purpose of teacher education, and its anticipated outcomes, is to produce teachers who are not only knowledgeable about subject content and teaching, but who also are skillful in pedagogy."

> The purpose of induction according to Schlechty (1985) is to develop in new members of an occupation those skills, forms of knowledge,attitudes, and values that are necessary to effectively carry out their occupational role. And more than this, the primary aim of induction is or should be to create conditions that cause new members to internalize the norms of the occupation to the point that the primary means of social control is self-control. (p. 5)

Lanier and Little (1986) further characterize teacher education as follows:

> For teaching to occur, someone (a teacher) must be teaching someone (a student) about something (a curriculum) at some place and point in time (a milieu). In teacher education, the teachers of teachers represent a diversity of roles and backgrounds--college professors, graduate assistants, public school supervisors, and others. The students are adults who are either prospective or practicing teachers. The curriculum of teacher education includes studies in general education, subject matter specialities, and pedagogy. The milieu or context of teacher education includes the general society, the university, the school district, the school, and various other contextual settings that affect teacher education in America. (p. 528)

In general, the characterizations of teacher education are also relevant for vocational teacher education. Historically, teacher educators, including vocational teacher educators, have supported a broad-based teacher education program.

"The term vocational teacher education," according to Erickson (1985, p. 30), "suggests a program that for all practical purposes does not exist. There is no standard pattern that applies across the board to all vocational fields." Vocational teacher education programs often include a potpourri of activities. These activities vary enormously from state to state and there is even greater variation among institutions within states. While preservice and inservice programs have constituted the central thrust of vocational teacher education programs, there have been a multitude of other activities. Vocational teacher educators, along with other teacher educators, have close ties with state department of education staff and local school staff. This close relationship has resulted in teacher educators being major participants in program improvement efforts such as curriculum development, program planning, program evaluation, research and development, and staff development. These kinds of involvement in program improvement and broadened staff development efforts enhance the potential for a coherent and interrelated design for the development of vocational education teachers.

The list of purposes for teacher education is lengthy and diverse, often driven by contextual forces not so readily visible to those unaware of the rich history peculiar to a given situation. Evaluators must always be careful about reading history as a prologue to the present, however there is a persistence of patterns we should recognize. Warren (1985) identifies and discusses these patterns.

> First, from the early nineteenth century forward, market considerations have driven both the policies and the curricula in teacher education, as both have responded to shortages and surpluses of teachers.

> Second, attempts to clarify responsibility for teacher education reflect a long history of controversy over the separateness of teacher preparation programs.
>
> Third, from the outset, teacher education has been viewed as virtually synonymous with instructional preparation. (pp. 10-11)

It is probably fair to say that policy at the federal and state level has intruded heavily on the philosophical bases that give direction to the purposes of vocational teacher education. It is important to realize this intrusion as one attempts to acquire a realistic picture of the complicated context of vocational teacher education. Additionally, it is important to remember that there are inseparable histories of vocational teaching, vocational teachers, and vocational teacher education.

Current Rationale for Vocational Teacher Education Program Evaluation

Research in most fields is dominated by a particular paradigm. Popkewitz (1979) describes a paradigm

> as a matrix of beliefs, patterns of conduct, and bodies of knowledge. These elements interact to give shape and definition to the conduct of inquiry. Paradigm also suggests an act of affiliation to the community of scholars. As individuals participate in a research community, the "scientific" view of the world does not remain detached from the individual. It becomes part of how individuals see, feel, think, and talk about events. (p. 52)

Historically, evaluators have generally used the methods, procedures, and techniques typically thought of as appropriate for the paradigm used by scholars and researchers in their field. Research and evaluation in the social sciences have been dominated by the empirical-analytic paradigm. Research conducted by vocational teacher educators has been dominated by this paradigm and program evaluation has, for the most part, been consonant with this pattern. Furthermore, the reliance on the empirical-analytic paradigm receives support because agricultural and home economics teacher educators are closely aligned with their subject fields where the empirical-analytic paradigm dominates.

What is the empirical-analytic paradigm? Smith (1983) provides a succinct statement of its major characteristics.

> . . . when Durkheim said that we should treat social facts as things, he was saying in effect that the objects of study in the social sciences should be treated in the same way physical scientists treat physical things. This means that if physical scientists can stand apart from their subject and think of it as having an independent, object-like existence with no intrinsic meaning, the same is true for social scientists. . . . Second, this school of thought claimed that social investigation was a neutral activity in regard to values, and accordingly, social scientists conducting research should (1) eliminate all bias and preconceptions, (2) not be emotionally involved with or have a particular attitude toward the subject, and (3) move beyond common-sense beliefs. . . . Finally, there was the idea that social science would serve as a basis for social engineering to improve society. . . . This desire for tangible results was of course associated with the prospect of discovering social laws. These laws would be like physical laws in that they would state the necessary and invariant relationships that existed between and among social objects. Furthermore, these laws . . . would allow for not only the explanation of social phenomena but also for the ability to discover causes and to make predictions. (p. 7)

Further explication of the empirical-analytic paradigm can be found in Coomer 1981; Farley, McKinney, Kohan, Smith, and Pratzner 1985; and House 1980.

Current Practice in Vocational Teacher Education Program Evaluation

In addition to the internal forces to prove or improve vocational teacher education programs, external requirements have influenced evaluation practice. These requirements have come from a state's program approval agency and from the National Council for Accreditation of Teacher Education (NCATE). In both instances the practices employed to meet the evaluation requirements typically include institutional self-reviews, including the follow-up of some former students. Typically a team of professional colleagues makes an on-site review visit to the institution to ascertain if various process standards have been met and to make judgments about them. These evaluations tend to be highly descriptive and focus on reports and documents prepared by the institution. Because of time constraints for the review team these evaluations are really evaluations of programs as the review team finds them to exist on paper. In describing this type of a review House (1982) notes that

> accreditation team(s) (are) selected from outside experts, and these people review program documents, visit the program sites, and write a report on the program's strengths and weaknesses. The standards they use to make their judgments are based upon their personal experience as professionals within their specialty and upon the experience of the profession as a whole. There are often written codes, rules, and criteria that the visitors are required to employ. Presumably, these codes arise from and are validated by the profession as a whole, although no particular profession would agree with all of them. (p.10)

More recently, with encouragement and requirements from accrediting agencies, questionnaires have been used to collect information during the time students are enrolled; at the time of student exit from the program; one, three, and/or five years following student completion of a program; and from supervisors of students who graduated from the program. Pegues (1978) found that the "one-shot" questionnaire mailed to teachers the first year following graduation was the most prevalent scheme for evaluation. Adams and Craig (1983) reporting on data from 445 institutions indicated that questionnaires were by far the most utilized form of collecting evaluation data, both during the preservice program and as a follow-up to the program.

Adams and Craig (1983) also reported that a limited number of institutions use direct classroom observation to collect evaluation data. Students/graduates were observed during and at the end of the teacher education programs, and to a very limited extent during the first year of teaching. About one-fourth of the institutions used personal interviews with students during preservice years and less than ten percent used personal interviews as a follow-up technique during the graduate's first year of teaching. Standardized tests received minimal use in teacher education program evaluation. Adams and Craig (1983, p. 35) indicate that "the evaluation techniques and sources of information employed were few in number both at the preservice and the follow-up levels."

A group of higher education institutions have worked with the Research and Development Center for Teacher Education at the University of Texas in an effort known as TEPFU (Teacher Education Program Follow-up Studies). The TEPFU group has worked toward improving all aspects of conducting teacher education follow-up studies (Hall 1981, p. 65).

Without question considerable useful, data are produced by follow-up studies and other studies used in evaluating teacher education programs, but Hall and Hord (1982) raise critical points when they said

> Now it appears that ours is a data collection profession rather than a data using one. And this would seem to be the case with the results from evaluation studies. Who sees the evaluation findings? How are findings disseminated? What are the expectations for the use of the findings? It is very clear that something more must be done with the information than just sending out a summary of findings. The problem is that doing more than just sharing summaries implies that some individuals or some things have to change. Isn't it interesting that we who focus our professional energies on learning, or change in others, are terribly reluctant to change ourselves and our practices. (pp. 21-22)

Adams and Craig (1983, p. 35) raise an important point when they noted "there is no one source of information regarding the status of program evaluation of teacher education programs and no simple way to keep abreast of such activities." Typically, most journals are not interested in reporting program evaluations conducted at a specific institution. If one carefully reviewed the programs of a multitude of professional association annual meetings (AERA, AVA, AEA, AACJC, AACTE, ASCD, AASA, and so forth) one might be able to collect a minimal number of relevant papers. There appears to be no existing procedure or extensive network to promote the dissemination of program evaluation efforts in teacher education. When one narrows the perspective to vocational teacher education program evaluation the situation is obviously worse.

Concerns With Current Evaluation Effort

Overreliance on Empirical-Analytic Perspective

Zeichner (1983, p.3) suggests that "our models of both research and practice in teacher education tend to be limited in number and narrow in scope and are too closely tied to paradigmatic orientations that are dominant at particular points in time." (The point was made earlier in this paper that evaluators tend to adopt practices and procedures used by researchers in their field). The dominant research and evaluation methodology in vocational teacher education has been heavily influenced by the positivistic model of science. Proponents assert that this model is the best way to acquire credible knowledge. Research and evaluation methodology based on this model reduces the human and social aspects of vocational teacher education to discrete, independent and dependent variables and is, thus, unable to capture the complexity and holistic nature of vocational teacher education programs. Moreover, the methodology relies extensively on quantitative measurement and extensive, sophisticated statistical analysis. Thus, the variables selected for evaluation and the data analysis methods used are nearly always selected by "experts" who are all too frequently far removed from the program being evaluated. Patton (1975) captured the problem when he noted

> It is easier, for example, to measure the number of words that a child spells correctly than to measure the same child's ability to use those words in a meaningful way . . . It is easier to count the number of minutes a student spends reading books in class than it is to measure what reading means to that child. (p. 19)

Unfortunately, as many evaluators have attempted to increase the utilization of evaluation findings they have fallen into a trap described by Gilsinan and Volpe (1984).

> . . . researchers have typically responded to utilization problems by attempting to increase the technical sophistication of the quasi-experimental method. This has the ironic effect of further distancing the world of the researcher from that of the policymakers. (p. 181)

Popkewitz et al (1979) provide an excellent summary of the problem.

> The empirical-analytic paradigm makes sense in a world in which it is possible to separate courses from one another so that some causes can be controlled while others are manipulated experimentally or otherwise traced. The world must be one in which causes *precede* and are *separate* from effects or else the logic (the search for control over causes that produce desirable effects) breaks down. No part of our world can be explained by such a naive and mechanistic model. Both regularity and individual and institutional variability help to shape the meaning of social events. Uncertainty, as in Heisenberg's famous principle of physics, is not the result of poor measuring instruments; it is a characteristic of the nature of matter in the world in which we live. (p. 56)

Lanier and Little (1986) indicate that there is hope.

> The predominantly quantitative and experimental research approach to the development of a knowledge base in education relegated description of good teaching practice to minimal status until only the past several decades. More recently, however, alternative approaches allowing for rich description and logical deduction analyses have been resurrected and focused again on the study of classroom teaching and learning. The visible shift away from a single dominant research paradigm has enriched the study of teaching practice and has begun to afford better understanding of research issues in teacher education. (p. 555)

Expert Domination

Evaluation of vocational teacher education programs under the current framework is expert-dominated. Vocational teacher education program evaluation is often conducted by outside agencies and individuals who are credentialed as having expertise in evaluation methodology and/or in the substantive area being evaluated. Frequently, evaluation studies are designed, data collected, data analyzed, and reports written with lack of truly meaningful participation from those individuals closest to the program. In some instances where there is extensive involvement of institutional personnel, the prescribed methodology is so oriented to the empirical-analytic paradigm and so precise that it is impossible to gain an understanding of the social and contextual factors affecting vocational teacher education programs.

Insufficient Consideration of Context

The quality of learning is significantly affected by the total educational context (e.g., administrative support, course offerings) and the larger community context (e.g., social mores, beliefs and attitudes about teacher preparation) in which learning occurs. Egbert (1985, p. 87) notes that . . . "teacher education is highly varied. It is just about whatever the state or the faculty defines it as being." Program evaluations in vocational teacher education have not adequately taken into account the processes and relationships within the school and the community that may contribute to program improvement.

Boyer (1983, p. 6) suggests that "schools can rise no higher than the communities that support them." Lanier and Little (1986) indicate that

> communities responsible for teacher education in the United States have been derelict in the exercise of their charge to provide quality programs and public assurance of well-prepared teachers. The higher education, public school, and professional communities of which teacher education is a part maintain loose and sometimes antagonistic relationships with one another, generally accepting teacher education as a tolerable second cousin. (p. 556)

If Boyer and Lanier and Little are correct in their assessments, and there is substantial reason to believe they are, then it is of utmost importance that context be given careful consideration in evaluating vocational teacher education programs.

Narrowness of Follow-up Studies

Follow-up studies of former students of vocational teacher education programs tend to focus on program outcomes at the time of learner completion. Frequently used indicators include teacher placement in a job and employers' level of satisfaction with the former student. Some institutions conduct follow-up studies of former students for varying periods of time after program completion but it is unclear as to the relationship of the vocational teacher education program experiences and teacher performance 3-5 years after program completion.

Summative and product evaluations are important, but they seldom consider information about the activities and processes related to program outcomes. Furthermore, they provide little direction in building an agenda for improving the vocational teacher education program. Hord and Bethel (1986, p. 11) questioned the robustness of data collected by a questionnaire at a single data point. Evaluation results should lead to a better understanding of the relationship of program inputs to outcomes. If program improvement is the goal of evaluation, then vocational teacher educators need an indication of which program processes to adjust to improve performance.

Accrediting Agencies and Associations Emphasis on Process

Silvers (1982, p. 13) described three major steps typically used by regional and specialized accrediting agencies. These three major steps are: "an institutional self-study conducted by the college or university, an on-site evaluation visit conducted by a team of peers, and a decision by a review commission of the association regarding whether or not to accredit the institution or program." As Hord and Bethel (1986, p. 3) note ". . . teacher education programs are deemed acceptable if process standards are met." In general, most accreditation evaluations are evaluations of what someone has written on paper. Evaluations of this type provide less than desirable stakeholder interaction. Furthermore, they are dominated by a central authority figure(s) in terms of standard determination.

Need for a New Approach

The problems of current evaluation practice in vocational teacher education are largely the same as much of the evaluation we see in education. Weiss (1983) summarizes these problems as follows:

- Evaluation and evaluative research are often narrow, focusing on some issues to the exclusion of others. However, it is often these other issues that are needed in program planning and revision decisions.
- Evaluations are often unrealistic in that they employ or imply standards of success that are difficult, if not impossible, for any one program to attain.
- Evaluations are all too often irrelevant insofar as the information they generate is not explanatory in nature, i.e., they often report correlation coefficients but do not explain the nature of the relationship between in dependent and dependent variables.
- Evaluations are often unfair because they reflect and address some interest (e.g., program administrators or sponsors) while excluding other interests (e.g., program staff or participants) even though the latter may be more directly or intensely affected by evaluation results and resulting program decisions.

Feistritzer (1984, p. 2) has indicated that "nothing in American education is in greater need of reform than the way we educate and certify classroom teachers." The results of evaluation should increase the potential for improving vocational teacher education programs. The typical approach to enhancing evaluation effectiveness in recent years has been to increase the sophistication of the methods, procedures, and techniques used.

This strategy, which does not necessarily lead to more useful results, has alienated many individuals. One of the key problems is that program evaluations are underled and overmanaged. They are underled in the sense that there is lack of leadership for executing a meaningful program evaluation effort. They are overmanaged in the sense that too many decisions are made at central authority levels with apparent unawareness that implementation efforts will require a spirit of community effort. Bennis (1984) indicates that organizations in American society "are not paying enough attention to doing the right thing, while paying too much attention to doing things right." Could this be the case for vocational teacher education program evaluation?

Vocational teacher education is a complex and diverse array of programs, activities, and services. It exists in complex institutional and community environments. An evaluation approach is needed that provides a realistic picture of vocational teacher education and the environment in which it exists.

CRITICAL PROGRAM EVALUATION FOR VOCATIONAL TEACHER EDUCATION

There is mounting evidence of a paradigm shift in evaluation. Leading evaluation theorists are rejecting the theories that have guided previous evaluation efforts. Facts, problems, and dilemmas confronting educators frequently cannot be appropriately analyzed with the dominant evaluation paradigm. There are many who are dissatisfied and who raise relevant and powerful questions about evaluation findings that come from efforts using the dominant evaluation paradigm. Kuhn (1962) identified these conditions as evidence of a paradigm shift.

In order to overcome the problems and deficiencies of the current program evaluation efforts in vocational teacher education a new framework is needed. The evaluation framework proposed in this paper is based on critical theory. It retains many of the beneficial aspects of current evaluation efforts and is designed to lead to improved vocational teacher education programs.

Theoretical Basis for Program Evaluation Framework

Critical theory is based on the assumption that persons bring to the evaluation process different perceptions of, and vested interests in a given issue. Critical evaluation emphasizes the questioning of basic, commonly held assumptions. This questioning, to the extent possible, should take place in an atmosphere of free and nonthreatening communication among those who are involved in or affected by the educational enterprise, the stakeholders (e.g., teachers, administrators, students, vocational teacher educators). Unless stakeholder underlying assumptions are brought out in the open and recognized, meaningful consensus cannot be gained and plans for program improvement cannot be realized. Critical theory is as concerned with the process by which a decision is reached as with the outcome or action resulting from the decision.

Program evaluation based on critical theory is concerned with (1) the understandings and motives resulting in human action, (2) the way programs are altered as individuals develop better understandings of program processes and structures, (3) the role of evaluators as participants in the program improvement process rather than as disinterested observers, and (4) stakeholders engaging in a self-education process about the vocational teacher education program and the environment in which it exists. In critical evaluation, the self-education process is seen as one that permits understandings and actions to develop, with the result being that programs change to become consistent with enlightened viewpoints. A more detailed explication of critical theory as a base for program evaluation is provided in Farley, McKinney, Kohan, Smith, and Pratzner, 1985); Feinbert, 1983; Habermas, 1981; and Lemert and Gillan, 1982.

It is important to remember that one seldom, if ever, achieves the "ideal" situation for program evaluation.

Regardless of the paradigm one selects, it is important to strive for the ideal conditions, realizing it is rarely possible to achieve in social settings.

The Evaluation Framework

Many people think of evaluation as a precise step-by-step process. While critical evaluation may proceed according to a logical order of activities, it is likely that many of the activities will occur during the same time period. An action at one point in time may mean that an action taken previously needs to be reconsidered and possibly altered. Figure 1 provides an illustration of critical evaluation in vocational teacher education. To a great degree, the activities shown in figure 1 are interactive.

Context for Critical Evaluations

A context for generating evaluation knowledge about the vocational teacher education program is created when (1) agreement among stakeholders regarding shared viewpoints break down or are called into question, and (2) the communication or interaction among stakeholders ordinarily used to resolve questions is no longer understood by the stakeholders (i.e., it is not shared communication). The four conditions necessary for shared oral or written communication are:

- Statements must be comprehensible and intelligible; that is, involved stakeholders must be able to understand each other. Misunderstandings must be clarified before further communication can occur.
- Statements must be accurate or true. Statements should be congruent with all available and mutually recognized pertinent information about the problem.
- Statements must be sincere in intent (e.g., there must be no hidden motives behind the communication). The individuals engaged in conversation must be truthful and trustful of each other's intentions.
- Communication must occur in a context where individuals feel free to express themselves without fear of reprisal.

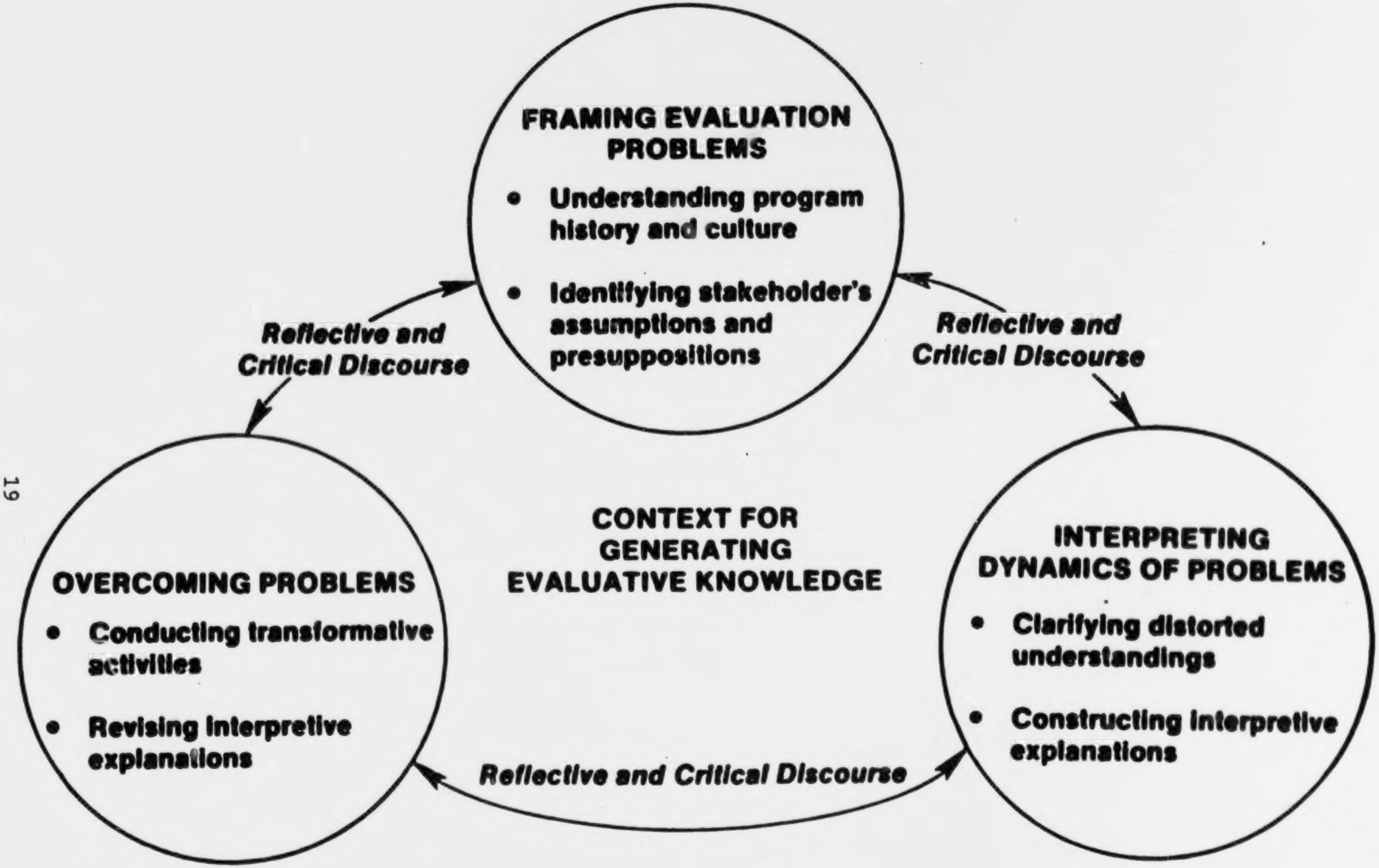
FRAMING EVALUATION PROBLEMS
• Understanding program history and culture
• Identifying stakeholder's assumptions and presuppositions
Reflective and Critical Discourse
Reflective and Critical Discourse
CONTEXT FOR GENERATING EVALUATIVE KNOWLEDGE
OVERCOMING PROBLEMS
• Conducting transformative activities
• Revising interpretive explanations
INTERPRETING DYNAMICS OF PROBLEMS
• Clarifying distorted understandings
• Constructing interpretive explanations
Reflective and Critical Discourse

FIGURE 1. CRITICAL EVALUATION IN VOCATIONAL TEACHER EVALUATION

As shown in figure 1, ongoing reflection and discourse are central to the conduct of critical evaluation. These are not methodological steps; rather, they pervade the critical evaluation process. Reflection is the process of identifying, making explicit, and critically examining all of the assumptions, values, and beliefs underlying the knowledge and understandings that are accepted or taken-for-granted by stakeholders. It is an ongoing, continuous process engaged in by stakeholders to validate periodically existing beliefs and to identify distortions, changes, or mismatches that may have occurred over time between accepted knowledge and understandings and the underlying norms or standards. Engaging in reflection helps stakeholders discover why things are the way they are and develop insights about ways to improve programs

Discourse is the formal, lengthy, earnest, and intelligent discussion of a subject, either written or spoken. It has also been defined as the process or power of reasoning. In critical evaluation, the term is used in both of these senses. Discourse is a means of resolving questions about the accuracy and truth of viewpoints or knowledge claims. Through discourse, stakeholders arrive at a consensus on statements of knowledge that are logical, accurate, and rational. Like reflection, critical discourse must be an ongoing activity in a critical evaluation.

In evaluating a vocational teacher education program, it is important to understand how the program has evolved over time through the development of certain accepted values or norms. Through communicative action, individuals and groups that are members of a community have agreed on these values or norms. These norms have provided the context in which certain community interests are achieved through the vocational teacher education program. For example, in some vocational teacher education programs, it is deemed important for the college or university to provide students with teaching and observing experiences early in a student's program. The values placed on these experiences are then an important part of the contextual information essential for effective program evaluation.

These norms vary not only from one community to another but also within communities. Ethnic groups, racial groups, age groups, and gender groups within a given community may be guided by radically different norms. The critical evaluation framework encourages those engaged in evaluation efforts to seek an understanding of these differences and how they might affect the vocational teacher education program.

Framing Problems in Critical Evaluation

As indicated in figure 1, framing problems includes both the identification of problems to be addressed during the evaluation and the interpretation stakeholders have of these problems, based on their experiences.

Particular attention must be paid to the reference points stakeholders use in interpreting vocational teacher education programs. The viewpoints stakeholders hold are heavily influenced by their ideas and perceptions of vocational teacher education and their relationship to it. These ideas and perceptions may be fairly consistent over time or they may be revised as circumstances change. An example of this change can be seen in how some stakeholders perceive the need for admitting students to vocational teacher education programs only when they have relatively high grade point averages. Do stakeholders hold this same view when there are far too few vocational teacher education graduates to meet the demand for teachers?

Understanding the cultural setting and clarifying viewpoints are activities that provide the backdrop for formulating evaluation problems or questions to be addressed. As stakeholders interact with each other, obstacles to the vocational teacher education program will become evident, as will any discrepancies between intended and actual program outcomes.

Interpreting Problem Dynamics in Critical Evaluation

A major consideration in critical evaluation, as shown in figure 1, is clarifying understandings and constructing explanations. One of the major aims of critical evaluation is to develop understandings of how and why the vocational teacher education program has evolved into what it is. Only in this way can stakeholders clearly identify problem sources and constraints. One of the distinctive characteristics of critical evaluation is the participation of stakeholders in this interpretive process. Such participation is necessary because the activities and attendant beliefs, values, and meanings of individual stakeholders make up the vocational teacher education program. That is, at least some stakeholders need to feel that they "own" the idea for change or innovation. Thus, program improvement can occur only through the conscious activities of these individuals and groups.

Participation is also necessary in order to conduct discourse examining the accuracy of stakeholder explanations about the vocational teacher education program. Participation in discourse helps to identify possible misinterpretations on the part of stakeholders, such as mistaken readings of the situation, inappropriate value positions, or claims based on self-serving interests. Explanations based on misunderstanding are distorted; thus, understanding must be sought through discourse among relevant stakeholders groups.

This process of achieving understandings is similar to that of deciphering a code. One is frequently confronted with an array of complex information. One may need to use various methodologies for obtaining information about the problem being evaluated. State-of-the-art research findings may also be brought to bear in order to make sense of the problem. Interpreting the problem involves data gathering, social and historical analysis, and stakeholder reflection and discourse. Interpreting the problem gets at questions lying at the heart of critical evaluation: Why? How did it come about? In whose interests? How does it fit into the larger educational, social, and political contexts?

Finally, it should be noted that the critical evaluation process cannot be expected to yield a single explanation that will be valid for all time and in all contexts. Rather, it can be expected to yield a valid explanation of current vocational teacher education reality that will clarify sources of current problems and suggest opportunities and strategies for modifying programs. With the passage of time, this interpretive explanation must be subjected to reanalysis, critiqued, and reconstructed.

Overcoming Problems in Critical Evaluation

As shown in figure 1, once the vocational teacher education reality is clarified, obstacles to program improvement efforts must be identified. Obstacles are those conditions, situations, and so forth that impede change and that are perceived to be real by those in the vocational teacher education setting. If obstacles are not perceived as problems by those in the setting, then attempts to overcome those obstacles become solo efforts by the "evaluator" as expert. As a result, participants in the setting become removed from the evaluation effort, and the power of critical evaluation is forfeited.

Transformative actions are attempts to penetrate and remove obstacles to program improvement; that is, they are efforts to create change. Purchasing new or updated equipment may be an example of a transformative action. Effective transformative actions solve problems and may cause new interpretive explanations of reality to emerge as well. The university that purchases new equipment may discover that another problem is created because vocational teacher educators cannot operate the new equipment. Thus, new interpretations of the situation may illuminate more problems and, consequently, call for further actions. In essence, this reality transformation, in which actions lead to the perception of new problems and their resolution, is a perpetual process.

Stakeholder Involvement in Critical Evaluations

The largest asset of a vocational teacher education program is human beings. Those individuals involved in and affected by the program (stakeholder)--students, teachers, administrators, vocational teacher educators and others--are the key ingredients in the vocational teacher education program's success or failure. Substantial evidence suggests that successful businesses have adopted this principle and have moved from "trusting the system" to "trusting people." These businesses have learned that worker output is increased when individuals are given a chance to influence their own destiny.

Successful schools have also discovered that trust in those people who are stakeholders results in more productive schools. This principle is not, however, universally practiced. Many of the suggested solutions to the problems of vocational teacher education cannot be imposed at the State or local management level. These "quick-fix" solutions do not involve stakeholders, as is necessary for effective program improvement.

Currently, much of the change in vocational teacher education occurs in a very disruptive fashion, frequently in reaction to some external pressure group or legislative initiative. A major strength of the ongoing involvement of stakeholders in the critical evaluation process is that change is not disruptive, but evolves in keeping with the changing needs of society and of the vocational teacher education reality. Critical evaluation in vocational teacher education focuses on program improvement that results from the intensive participation of stakeholders in identifying the problem, collecting information about the problem, and designing strategies for solving the problem.

Evaluation as a Continuing Education Process

A fundamental difference between critical evaluation and most other forms of evaluation currently practiced in vocational teacher education is the involvement of stakeholders. This involvement is not to be construed as "window dressing." The spirit of innovation and experimentation so critical to program improvement is dependent upon sustained and rigorous dialogue among stakeholders. A major aim is for stakeholders to better understand their positions and the culture in which they operate. Enlightened stakeholders are in a much better position to alter those conditions they find detrimental to excellent programs.

The educative process is a continuing activity. Stakeholders viewing their past actions can see how social conditions and remedies suggested for problems may interact both to improve programs and contribute to new problem areas. Continuing involvement in the evaluation process helps keep stakeholders aware of changing conditions and encourages the development of understandings and actions appropriate for program improvement. Through this process, critical evaluation permits stakeholders to attain a deeper awareness of the reality that shapes the vocational teacher education program and of their capacity to improve that reality.

Critical Evaluation at Different Levels

Because the extensive involvement of stakeholders is an essential part of critical evaluation, it is most suited for use at the local (institutional) education level. This is consistent with the fact that educational improvement is basically a local initiative.

However, some elements of critical evaluation are applicable at every level. Certainly, the need to involve stakeholders in State and Federal evaluation efforts is clear. The advantages of having stakeholders engage in critical reflection and discourse are not confined to the local level. However, State and Federal demands for program accountability often results in a reliance on quantitative data. Attempts to develop more qualitative understandings of the program are often de-emphasized. Nevertheless, the latter is essential for institutional program improvement.

Distinguishing Features

It is suggested that critical evaluation can serve as an alternative to conventional ways of evaluating vocational teacher education programs. What, then, distinguishes critical evaluation from current evaluation efforts?

Understanding the Past

Vocational teacher education programs do not exist outside of their historical context. A historical understanding of the ways the vocational teacher education program is based on the community and institutional culture and on the experiences of stakeholders is an essential aspect of critical evaluation. Through reflection and discourse, stakeholders can formulate explanations of the program's development. By understanding the past, stakeholders will be in a better position to propose changes for program improvement.

Communication

As has been emphasized, discourse among stakeholders is a key feature of critical evaluation. These intense discussions among stakeholders involve self-reflection and are intended to reveal unexamined motives, meanings, and intentions.

Stakeholder Involvement

Critical evaluation relies on and promotes the democratic participation of stakeholders. Vocational teacher education is a particularized program that reflects the interests, motivations, and needs of a complex and diverse group of stakeholders. Many of the benefits of extensive and in-depth stakeholder involvement are long-range. Because of their involvement, fundamental changes in stakeholders' attitudes can result in significant program changes.

Continuing Effort

Critical evaluation does not have discrete beginning and ending points. It is a continuous process in which problem clarification, problem interpretation, and problem solving always interact. As the context changes, the problem changes, the information needed to examine the problem changes, and the most feasible solution may change. The selection of a solution may create conditions that will contribute to other problems. Program improvement is not a static affair. It demands attention through an interactive, continuing evaluation process.

Other distinguishing features of critical evaluation can be cited (e.g., capacity to use information collected and analyzed from the positivist and interpretive traditions, the continuing educative function); however, those discussed above are the most important ones. A careful study of the features that distinguish critical evaluation from current evaluation efforts in vocational teacher education reveals the enormous potential contribution critical evaluation can make to program improvement.

Considerations for Implementation

Secure Institutional and Administrative Support

Institutional and administrative support is essential if critical evaluation is to be successful in any setting. This support must be reflected in terms of reward systems, provision of resources (time, finances, and so forth). Chief administrators will need to understand critical evaluation and encourage institution-wide support.

Arrange for Resources

Time. Vocational teacher educators considering the implementation of critical evaluation should recognize that a substantial amount of time will be required for stakeholders to engage in reflection and discourse. There is no magic answer to the question, "How much time will be required?" Time requirements depend on the complexity and diversity of the program, the nature of the problems studied, and so forth. The time required should be viewed as a solid investment in improved programs.

Finances. Evaluation, as any other worthwhile activity, can not be conducted without adequate financial support. Arrangements will need to be made so that adequate time is allotted for leadership and support staff activities.

Designate Leader

An individual should be designated to provide leadership for the critical evaluation effort. This individual must possess an understanding of the conceptual framework and be familiar with ways to implement critical evaluation. Above all, the individual designated as leader should be able to maintain good working relationships with the wide-range of individuals likely to be involved in vocational teacher education program evaluation.

Ensure Context for Democratic Participation

For critical evaluation to achieve optimal results, it is essential that institutional administrators create an open and noncoercive environment, giving access to information and encouraging discussion of all aspects of evaluation problems. Stakeholders must be convinced that any comments they make will not be held against them. Participants in the evaluation process also need to understand how their recommendations will affect decisionmaking and policymaking.

Identify Stakeholders

Stakeholders of the vocational teacher education program are those individuals involved in the program and affected by the program. Groups such as vocational teacher educators, students, college/university administrators, former students, and employers (local school superintendents, vocational education directors, and so forth). One should probably start with volunteers as the stakeholder group. Volunteers are more likely to be enthusiastic about the effort and will assist in creating a positive feeling about the evaluation effort. The stakeholders involved in the evaluation effort at any given point of time will vary according to the nature of the problem being studied.

Gain Stakeholder Participation

If individuals are interested in the problem being studied and are engaged in meaningful activities concerning the problem there will be a greater likelihood of stakeholder participation. The effort should be stakeholder dominated with only essential direction being provided by the evaluation leader. A multitude of group processes and techniques can be used to assist in keeping the group focused on the problem while maintaining reflective and critical discourse

Promote Reflective and Critical Discourse

Continuous attention will need to be given to processes and activities likely to ensure that stakeholders engage in reflective and critical discourse. It is the reflective and critical discourse that adds the texture of individual meanings to the description of the context. It is essential to acquire the feelings of participants in the vocational teacher education setting so that there will be more of a sense of the whole in terms of how participants in the setting experience it. Extensive probing and questioning must occur among participants concerning their feelings about vocational teachers education in regard to effects, benefits, societal forces, political forces, and economic forces.

ANTICIPATED BENEFITS OF USING CRITICAL EVALUATION

Research on effective schools supports the fact that impact on learner achievement is possible. The challenge then is to implement a process that will enable institutions to improve their vocational teacher education programs.

The research and literature regarding effective schools and the change process strongly suggest that program improvement is much more likely to occur when there is--

- involvement of the stakeholders in the program improvement process;
- attention to the complex interrelationships of values, beliefs, attitudes, and norms that exist among stakeholders;
- an understanding of the historical aspects of a program's development and of the current school and community culture in which the program is situated;
- an atmosphere among stakeholders that encourages nonthreatening intellectual discussion that can lead to consensus and unity.

The critical evaluation framework proposed for vocational teacher education directly addresses these key considerations for implementing school improvement efforts. Following are some of the major benefits to be expected when using critical evaluation.

Stakeholder Support

It is no secret that individuals are more enthusiastic in their support of ideas and changes when they have been meaningfully involved in the generation of the ideas and changes. The proposed critical evaluation framework relies on extensive involvement of stakeholders as an essential ingredient of the evaluation effort, involvement at a much greater depth than that typical of most current evaluation efforts. Without question, this kind of involvement will result in stakeholders having intense feelings and beliefs about the value of their proposals for program improvement.

Meaningful Information

Information about a program fails to achieve optimal impact unless it is interpreted in light of stakeholder values, beliefs, and feelings. The critical evaluation framework permits the use of quantitative and qualitative information appropriate to the problem under evaluation. This information becomes more meaningful as stakeholders interact with each other and interpret the information in light of their feelings, beliefs, and attitudes.

Context-specific Recommendations

When the critical evaluation framework is used, the actions identified as appropriate for improving the program will be specific to a particular situation. The emphasis on the program's historical development and the interaction among program stakeholders will help assure that recommendations for program improvement are tailored to meet the needs of the specific setting. This should enhance the utility of evaluation findings considerably.

Consensus on Recommendations

Most current evaluation efforts are dominated by an individual or small group of individuals, representative of some central authority figure. Such efforts are certainly not stakeholder based. In critical evaluation, honest and earnest attempts are made to achieve consensus among stakeholders. This consensus building in all phases of critical evaluation gives recommendations for program improvement a better chance of being implemented.

Critical evaluation is a fundamental and radical departure from current vocational teacher education program evaluation efforts. It incorporates both the common sense of stakeholders and a strong theoretical base. Vocational teacher educators searching for a more flexible, sensible, and practical approach to program improvement should explore thoroughly the merits of critical evaluation.

RECOMMENDATIONS

Braskamp (1982) reminds us that

> an evaluation system should reflect a decentralized and diffuse nature of policy making especially that involving academic programs. Continual involvement of various audiences in the valuation process is needed to obtain their value perspectives and to establish a mutual problem-solving, trusting relationship, a condition that also facilitates subsequent policy making, program planning, and program implementation. (p. 64)

Braskamp's views expressed in this statement are congruent with those expressed in this paper. The following recommendations for future action in vocational teacher program evaluation are made on the basis of the material presented in this paper.

- Vocational teacher educators engaged in program evaluation should accept the reality and existence of paradigms more suitable for evaluation than the dominant empirical-analytic paradigm. Program evaluation based in critical theory is more congruent with the realities of vocational teacher education endeavors.

- Most vocational teacher educators have been trained in one dominant inquiry paradigm. Professional development activities on an individual and group basis are needed so that vocational teacher educators can acquire the background knowledge essential to the application of more realistic inquiry paradigms. These professional development activities need the joint leadership, cooperation, and support of federal, state, and local policymakers and decision makers. Professional organizations should be actively involved in these activities.

- To be most beneficial vocational teacher education program evaluation must be continuous. Evaluation activities must be more than a once every three or five year effort.

- Materials need to be developed for use by vocational teacher educators in evaluating their programs. These materials should be field-tested, revised, and disseminated through exemplary sites and seminars/conferences.

CONCLUSION

Peters and Austin (1985) observed that

> In the private or public sector, in big business or small, . . . there are only two ways to create and sustain performance over the long haul. First, take exceptional care of your customers via superior service and superior quality. Second, constantly innovate. Both are built . . . on a bedrock of listening, trust, and respect for the dignity and the creative potential of each person in the organization. (p. 20)

Attaining excellence in vocational teacher education is not unlike sustaining performance according to the ways suggested by Peters and Austin. In this paper we have referred to stakeholders in a way similar to Peters' and Austin's customers. Our goal in this paper has been to present a program evaluation effort that will result in program improvement, a significant element of which will be the need to innovate. Most important, emphasis has been placed on the need for realizing the importance of involving stakeholders. Without listening, trusting, and engaging stakeholders in dialogue there will be minimal opportunity for improving vocational teacher education programs.

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SUMMARY AND RECOMMENDATIONS

A summary of several of the points presented by the paper authors and personal observations and recommendations were made by Dr. Gordon Swanson, Director of Graduate Studies, Department of Vocational and Technical Education, University of Minnesota St. Paul.

- APPENDIX A-

The following members of the Technical Advisory Group(TAG), their representatives, and Institute staff members served to introduce the research paper topics, present background information on the presenters and moderated group discussion of the highlights of the paper as presented.

In Presentation Order

"Recruitment and Retention of Vocational Education Teachers," Dr. Mark Newton(TAG), Past President-American Vocational Education Personnel Development Association

"Teacher Certification and Vocational Education," Dr. Willard Daggett, Director-Office of Occupational Education Programs, New York State Education Department (Representing James A. Kadamus(TAG), New York Assistant Commissioner for Occupational and Continuing Education)

"Structured Employment Experiences and Vocational Teacher Education," Dr. Barbara Kline, Director-National Academy for Vocational Education(TAG)

"Statewide Systems of Vocational Teacher Education," Dr. F. Marion Asche(TAG), Past President-American Vocational Education Research Association

"Evaluation and Vocational Teacher Education," Mr. George Quarles(IRDOE-Project Technical Advisor), Former Assistant Commissioner of Vocational and Adult Education-U.S. Office of Education

AN INVITATIONAL COLLOQUIUM
ON
CRITICAL ISSUES IN VOCATIONAL TEACHER EDUCATION

Sponsored by the

Coordinating Committee on Research in Vocational Education
of the
U.S. Department of Education

and the
Office of Vocational and Adult Education

May 22, 1986
9:00 a.m. - 3:30 p.m.

Room 4234
DOT Nassiff Building
400 7th St., S.W.
Washington, D.C.

AGENDA

CRITICAL ISSUES IN VOCATIONAL TEACHER EDUCATION

May 22, 1986

8:45 - 9:00 Coffee

9:00 - 9:15 **Welcome**

Dr. Howard F. Hjelm
Chairman
Coordinating Committee on Research
in Vocational Education

Overview of Colloquium

Mr. John Pucciano
Special Assistant
Office of the Assistant Secretary for
Vocational and Adult Education

9:15 - 10:00 **Recruitment and Retention of Vocational Teachers**

Facilitator: Dr. Mark Newton
President
American Vocational Education
Personnel Development Association

Author: Dr. Richard Lynch
Professor
Marketing and Distributive Education
Virginia Polytechnic Institute

10:00 - 10:15 BREAK

10:15 - 11:00 **Teacher Certification and Vocational Education**

Facilitator: **Dr. Willard Daggett**
Director
Office of Occupational
Education Programs
New York State Education Department

Author: **Dr. Norma Milanovich**
Assistant Professor and Coordinator
Occupational/Vocational Programs
University of New Mexico

11:00 - 11:45 **Structured Employment Experiences and Vocational Teacher Education**

Facilitator: Dr. Barbara Kline
Director
National Academy for Vocational Education

Author: Mr. Jack McElroy
Professor and Director
Vocational-Industrial Education
University of Kentucky at Lexington

11:45 - 1:15 LUNCH (on your own)

1:15 - 2:00 **Statewide Systems of Vocational Teacher Education**

Facilitator: Dr. F. Marion Asche
President
American Vocational Education Research Association

Author: Dr. Darrell Parks
Director
Vocational and Career Education
Ohio State Department of Education

2:00 - 2:15 BREAK

2:15 - 3:00 **Evaluation and Vocational Teacher Education**

Facilitator: Mr. George Quarles
Director
Sewanaka Central High School District
Long Island, New York

Author: Dr. Floyd McKinney
Senior Research Specialist
National Center for Research in Vocational Education

3:00 - 3:30 **Summary and Adjournment**

Dr. Gordon Swanson
Director of Graduate Studies
Department of Vocational and Technical Education
University of Minnesota

-Appendix C-

RICHARD LEE LYNCH

Marketing Education Program Area
Virginia Polytechnic Institute and State University

Ed.D. in Vocational Education, with minors in Marketing and Organizational Behavior and Guidance and Counseling, Indiana University, 1973

M.A. in Distributive Education, with minors in Marketing and Guidance and Counseling, University of Minnesota, 1969

B.A. in Business and Education, minor in English, University of Northern Iowa, 1965

Professor, Marketing Education and Vocational Education, Virginia Tech., 1972-present (on leave, 1981-82 academic year; Program Leader for Marketing Education, 1973-84)

Post-doctoral Fellow, Advanced Study Center, National Center for Research in Vocational Education, September 1981-May, 1982

Instructor of Vocational Education, Indiana University, 1969-1972

Graduate Assistant, University of Minnesota, 1968-1969

Teacher-Coordinator and Adult Instructor, Marketing and Distributive Education, Milwaukee, Wisconsin, 1965-1968

Various positions in retailing, marketing, and office work, 1958-1965

Authored one career and one methods textbooks, authored research monograph on future of marketing education, co-authored two marketing textbooks and one casebook, counsulting editor for eight marketing textbooks, and author of chapters in three professional education textbooks.

Published in following journals: VocEd, Marketing and Distributive Educators' Digest, Technical Education, Marketing Educator's News, Business Education Forum, and Journal of Business Education.

Directed eight major research projects in futuristic planning, curriculum for prebaccaluareate marketing education programs, entrepreneurship, small business management, cooperative education youth organizations, and competency-based education.

Consultant to or speaker at conferences sponsored by twelve universities; twenty state education agencies; U.S. Departmentof Education, Labor, and Commerce; National Center for Research in Vocational Education; DECA; and IDECC

Cited as National Outstanding Young Education Leader — Phi Delta Kappa, 1981

Recipient of Academy of Distributive Teacher Education Award for Meritorious Achievements, 1981

JACK McELROY
Professor and Head, Department of
Vocational/Industrial Education
University of Kentucky at Lexington Kentucky

B.S. in Vocational Education, Western Michigan University, 1962

M.A. in Education, Western Michigan University, 1966

Ed.D. in Vocational Education, University of Cincinnati, 1974

Apprentice and Journeyman Tool and Die Maker, Erie Pennsylvania

Teacher of Vocational Machine Shop and Head -- Department of Industrial Education, Three Rivers High School, Michigan

Assistant Professor, Machine Tool Technology Department -- Ferris State College, Grand Rapids Michigan

Principal Investigator -- Kentucky Statewide Study of Work Experience Programs for Vocational Teachers

FLOYD L. McKINNEY
Senior Research Specialist,
National Center for Research in
Vocational Education, The Ohio State Uiversity

B.S. in Agricultural Education, University of Missouri at Columbia

M.S. in Agricultural Education, University of Missouri at Columbia

Ph.D. in Vocational Education -- Michigan State University

Instructor and Professor -- University of Kentucky and Texas Agricultural and Mechanical University

Department Head -- College of Education, Texas Agricultural and Mechanical University

Division Head -- Kentucky State Department of Education

Director and Principal Investigator of numerous research and evaluation studies of education at the local, national and State levels

Author of publications in research, evaluation and vocational education

Member, presenter and disscussant in national meeting programs of the American Evaluation Association, American Vocational Association, American Education Research Association, and, The American Association of Colleges for Teacher Education

Dr. McKinney's special interest and expertise is in the area of conceptualizing, planning and conducting evaluations of teacher education programs; he emphasises the need to involve all those who have a stake in the evaluation outcome in the evaluation process. His most recent work has been in the investigation of the potential of "critical theory" as the basis for program evaluation processes which are meaningful to the stakeholders.

NORMA J. S. MILANOVICH
Assistant Professor and Director
New Mexico Consortium for Research
and Development in Occupational Education
The University of New Mexico

B.S. in Home Economics Education-minor English, University of Wisconsin, Stout -- 1968

M.A. in Curriculum and Instruction, University of Houston-Texas -- 1982

Ed.D. in Program and Curriculum Development, University of Houston-Texas -- 1982

Teacher of Adult Education

Teaching Fellow and Instructor -- Department of Human Services, University of Houston

Assistant Professor of Home Economics, University of New Mexico

Assistant Professor, and, Director of the Vocational Education Equity Center; Coordinator for Occupational/Vocational Education Programs, University of New Mexico

Author of Twenty Publications in Vocational Education, Education Equity, Career Guidance and Classroom Instruction, and, Twenty-five Funded Projects

Professional Study Foreign Tour Coordinator

Recipient: Outstanding Young Woman in America Award, and, Phi Delta Kappa, "Spotlight on Quality in Education" Award

DARRELL L. PARKS
Director of Vocational and Career Education
Ohio Department of Education

B.S. in Agriculture, Ohio State University -- 1959

M.S. and Ph.D. in Education, Ohio State University -- (Ph.D.) 1968

Teacher of Vocational Agriculture

Administrator of a Public Secondary Vocational School

Supervisor of Agriculture Education, and, Assistant Director in Charge of Vocational Agriculture Education -- Ohio State Department of Education

Director (first) -- National Academy for Vocational Education

Past President -- American Association for Vocational Education Personnel Development

Recipient -- Ohio State's Centennial Award, and, Ohio State Department of Education's Distinguished Service Award

Authors of Numerous Professional Articles in Vocational Education

---

GAIL HASSELBACH HENDERSON (Co-Author)
Supervisor for Communications Including Publications,
and, Interagency Initiatives
Division of Vocational and Career Education
Ohio Department of Education

B.S. in Home Economics Education, Ohio State University -- 1966

M.A. in Human Ecology; Department of Family Studies, Michigan State University --1971

Ph.D. in Education; Department of Educational Foundations and Research -- 1978

Teacher of Vocational Home Economics

Instructor in Home Economics Education and Supervisor of Home Economics Student Teachers

State Supervisor of Vocational Home Economics Programs -- Ohio Department of Education

Author of fourteen articles in Home Economics, Family and Vocational Education in professional journals and publications; author of a standard textbook on Self, Family and Work Life

Major presenter at state and national conferences on Family and Home Economics Education

Member: American Vocational Association, Ohio Home Economics Association, Phi Delta Kappa, American Home Economics Association, and, The National Council on Family Relations

PROJECT STAFF

LEE COHEN — PRINCIPAL INVESTIGATOR

Director — Institute for Research and Development
in Occupational Education,
The Graduate School and University Center
City University of New York, 1971-86

B.S. in Mathematics and Physical Sciences, New York University -- 1948

M.S. in Biological Sciences, New York University — 1949

Ph.D. in Counseling and Psychology, New York University -- 1960

Teacher of Science and Mathematics, Guidance Counselor and Program Administrator -- Board of Education, New York City Public Schools
Lecturer in Statistics and Measurement, New York University
Dean (founding) and Professor — Manhattan Community College, City University of New York
Consultant/Examiner on Accreditation — Middle States and North Central Associations of Colleges and Universities
Advisory Council Member/Consultant — Economic Developoment Council (New York), Association of Business, Labor and Education, Association for Humanistic Education and Development
Director of Component Developmental Projects — Futuring Vocational Education Curriculum and In-Service Teacher Education, The New York State Education Department
Co-author, Handbook of Vocational Education Evaluation, Sage Publications, Beverly Hills California, 1979
Director or Principal Investigator in numerous research and development projects in Vocational Education: Curriculum, Delivery Systems for Special Needs Populations, Non-traditional Occupations and Training, Sex Equity, Teacher Education, Equal Rights, and Interactive Telecommunications for Instruction
Member: American Vocational Association, American Education Research Association, American College Personnel Association

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GEORGE R. QUARLES — TECHNICAL ADVISOR

B.S. in Industrial Education, Hampton Institute, Virginia -- 1951

M.A. in Vocational Education, New York University -- 1956

Post Graduate Studies, Industrial Teacher Education Program, University of the State of New York

Teacher and Supervisor of Instruction of Related Technical Subjects: Mathematics, Science and Drafting, New Rochelle Public Schools
Director, Manpower Skills Training Center, Newark New Jersey, The New Jersey State Department of Education
Chief Administrator-Office of Career and Occupational Education, Board of Education, City of New York
Deputy Assistant Secretary, Office of Vocational and Adult Education, United States Department of Education
Director of Vocational Education, Sewanaka Central High School District, Floral Park, New York
Consultant: National Center for Research in Vocational Education, and Technical Review Team for the National Study on Vocational Education of N.I.E.

ALAN G. ROBERTSON — PROJECT OPERATIONS MANAGER

B.A. in History and Economics, Queens College of the City University of New York -- 1949

A.M. in Teaching, minor in Trade Unionism and Collective Barginning, Harvard University -- 1950

Ed.D. in Vocational Guidance, Psychology and Measurement, New York University -- 1960

Teacher and Educational and Vocational Counselor, New York City Board of Education
Director of Guidance and Coordinator of Non-Academic Curriculum Development (H.S.), Plainedge Junior and Senior High Schools, Massapequa New York
Advisory Committee Member -- Nassau County Vocational Education Extension Board
Associate in Research (Vocational Education), Chief and Program Manager-Bureau of Occupational Education Research, Director-Research Coordinating Unit (RCU) in Vocational Education, Director-Division of Education (Program) Evaluation: New York State Education Department (retired 1984)
Adjunct Research Associate, Institute for Research and Development in Occupational Education, The Graduate Center, City University of New York

State Representative (N.Y.), U.S. Office of Education-Chief State School Officers' Joint Task Force on Management and Evaluation of Federally Aided Programs
Author/Editor/Principal Investigator/Editor of over 150 monographs and publications in Occupational Education, Practical Arts, and Guidance Counseling
Past President and Founding Member, American Vocational Education Research Association
President, Association for Measurement and Evaluation in Counseling and Development
Nationally Certified Career Counselor